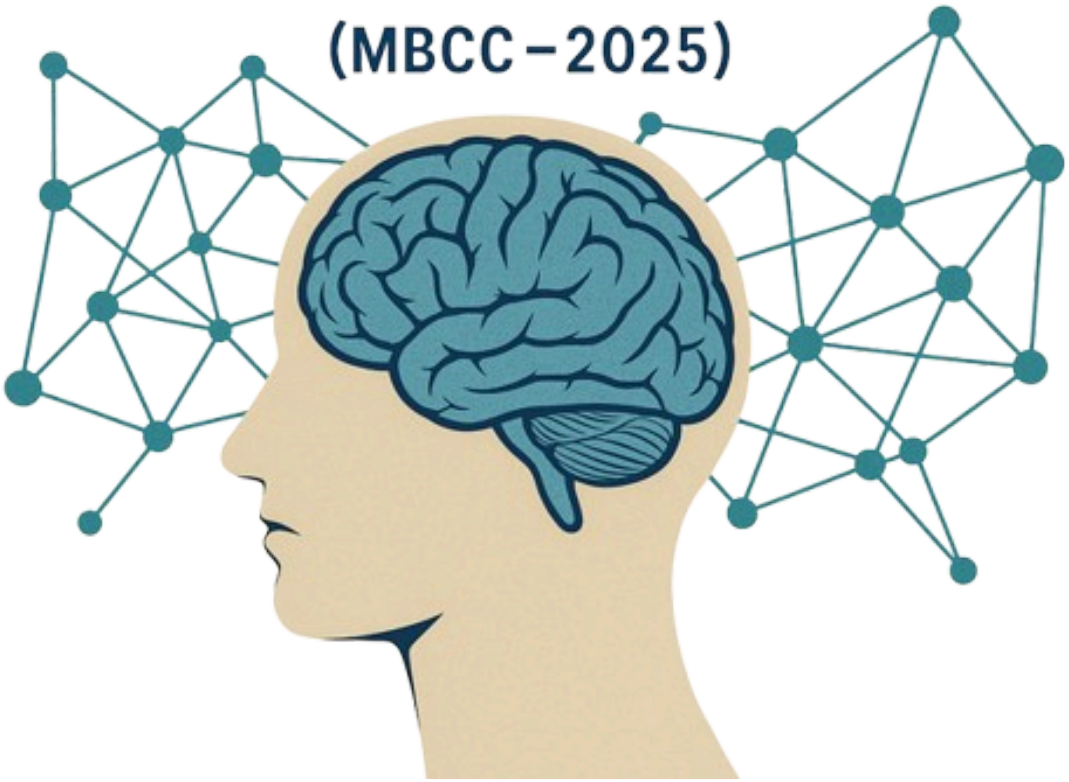
MIND, BRAIN, AND CONSCIOUSNESSS CONFERENCE

(MBCC–2025)



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Indian Knowledge System and Mental Health Applications (IKSMHA) Centre,
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Schedule of 4th June (Day 1)

Navami, Jyastha, Shukla Paksha, Vikram Samvat 2082

Time	Event	Session Chair	Venue
7:30-8:30	Breakfast		Lawn
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9:30-10:00	Visionary Talk **Sri Sri Ravi Shankar**	Mr. Ajay Chaturvedi	Auditorium
10:00-10:45	Plenary Talk 1 **HH Bhakti Rasamrita Swami**	Prof. Laxmidhar Behera	Auditorium
10:45-11:00	Tea Break		Foyer
11:00-13:00	Special Session 1: **Decoding Brain Dynamics for Cognition, Consciousness, and Motor Control**	Dr. Amit Sethi	Hall A
	Workshop 1: **Dharma in Indian Katha Parampara**	Mr. Vikram Sridhar	Hall B
13:00-14:00	Lunch break		Lawn
14:00-16:00	Special Session 2: **Neuroimaging Tools for Cognitive and Clinical Neuroscience**	Dr. Sanjeev Nara	Hall A
	Regular Session 1: **Art and Music in Indian Knowledge System**	Prof. Hari Krishna Padavala	Hall C
	Regular Session 2: **Cognition and Well-being in Indian Cultural and Philosophical Traditions**	Dr. Lalan Kumar, IIT Delhi	CnP(Hall D)
16:00-16:15	Tea Break/Networking		Foyer
Starts at 15:30	Workshop 2: **Sattvic cooking - Theory**	Radha Vallabh Das	Hall B
	Workshop 2: **Live Sattvic Cooking**		Near Guest House
16:15-18:15	Special Session 3: **Kullhad Economy — A Shining Beacon for Sustainable, Glocal Economic Transformation**	Mr. Ajay Chaturvedi	Hall A
	Regular Session 3: **Mental Health through the Lens of Yoga and Ayurveda**	Dr. Shyamasundaran K	Hall C
	Regular Session 4: **Mind and Well-Being: Ancient Wisdom, Contemporary Applications**	Prof. Ankush Mittal	CnP(Hall D)
18:30-19:30	Cultural event		Auditorium
19:30-21:00	Dinner		Lawn

Schedule of 5th June (Day 2)

Dasami, Jyastha, Shukla Paksha, Vikram Samvat 2082

Time	Event	Session Chair	Venue
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8:45-10:45	Special Session 4: **Brain, Mind, Consciousness and Mental Health: Modern and Ayurvedic Approach, their uniqueness and commonalities**	Prof. Rama Jayasundar/ Dr. Shankar Prasad	Hall A
	Regular Session 5: **Exploring Mind and Self through Indian Epistemologies**	Prof. Akhaya Kumar Nayak	Hall C
	Regular Session 6: **Emerging Technologies in Neuroscience and Mental Health**	Ms. Saumya Subramanian	CnP(Hall D)
10:45-11:00	Tea break		Foyer
11:00-13:00	Special Session 5: **Brain, Mind, Consciousness and Mental Health: Modern and Ayurvedic Approach, their uniqueness and commonalities**	Prof. Rama Jayasundar/ Dr. Shankar Prasad	Hall A
	Special Session 6: **Transcendental Phenomenology and Human Science Inquiry: Integrating First-Person Perspectives**	Dr. Richa Chopra	Hall B
	Regular Session 7: **Cognitive Biomarkers and Neurotechnologies**	Dr. Ramajayam Govindaraji	Hall C
	Regular Session 8: **Perception, Consciousness, and Neuro-Cognitive Biomarkers**	Dr. Pushpendra Singh	CnP(Hall D)
13:00-14:00	Lunch Break		Lawn
14:00-14:45	Keynote Talk 1 **Dr. B N Gangadhar**	Prof. Laxmidhar Behera	Auditorium
14:45-15:30	Keynote Talk 2 **Dr. Gautam Desiraju**	Prof. Ganpati Ramanath	Auditorium
15:30-16:00	Invited Talk 1 **Prof. GS Murthy**	Dr. Venkatesh Chembrolu	Auditorium
16:00-16:30	Invited Talk 2 **Prof. Supratim Ray**	Prof. Sandeep Kumar	Auditorium
16:30-17:30	Panel Discussion 1: **IKS Shaping the Science of Cognitive Matter**	Prof. Laxmidhar Behera	Auditorium
17:30-19:00	Poster session (32)/High Tea		Foyer
	Special Session 7: **Electromagnetic Resonance of Biomaterials: New Insights into Brain Functions**	Dr. Pushpendra Singh	Hall A
19:00-20:00	Cultural		Auditorium
20:00-21:00	Dinner		Lawn

Schedule of 6th June (Day 3)

Ekadashi, Jyastha, Shukla Paksha, Vikram Samvat 2082

Time	Event	Session Chair	Venue
7:30-8:45	Breakfast		Lawn
9:00-9:45	Keynote Talk 3 **Prof. Nirmalya Chakraborty**	Prof. Chayan Nandi	Auditorium
9:45-10:30	Keynote Talk 4 **Prof. Shrinivasa Varakhedi**	Prof. Ganpati Ramanath	Auditorium
10:30-11:00	Invited Talk 3 **Mrs. Shefali Vaidya**	Prof. Varun Dutt	Auditorium
11:00-11:15	Tea break		Foyer
11.15-11:45	Invited Talk 4 **Dr. Narendra Arya**	Dr. Subhajit Roy Chaudhury	Auditorium
11.45-12:45	Panel Discussion 2: **Nurturing Civilizational Consciousness for Transformation**	Prof. Ganpati Ramanath	Auditorium
13:00-14:00	Lunch break		Lawn
14:00-14:30	Invited Talk 5 **Sri. Ajay Chaturvedi**	Dr. Ramajayam Govindaraji	Auditorium
14:30-17:00	Special Session 8: **Consciousness and LLMs: A Synergistic Approach to Intelligence**	Dr. Rohit Saluja	Hall A
	Special Session 9: **Yoga and Mental Health – Concepts, Experimental Findings & Applications**	Prof. Chayan Nandi & Dr. Ramajayam Govindaraji	Hall B
	Regular Session 9: **Intelligent Systems and Consciousness Studies: From Plants to Human Beings**	Dr. Sanjeev Nara	Hall C
	Regular Session 10: **Neurocongitive Therapies and Contemplative Practices**	Prof. Sandeep Kumar	CnP(Hall D)
17:00-18:30	Poster presentation (35)/High Tea		Foyer
18:30-19:30	Cultural program		Auditorium
19:30-21:00	Gala Dinner		Lawn

Schedule of 7th June (Day 4)

Maha-Dvadashi, Jyastha, Shukla Paksha, Vikram Samvat 2082

Time	Event	Session Chair	Venue
7:30 - 8:45	Breakfast		Lawn
9:00-9:45	Plenary 3 **Prof. Roumiana Tsenkova**	Dr. Anirban Bandyopadhyay	Auditorium
9:45-10:15	Invited Talk 6 **Prof. N Srinivasan**	Prof. Arnav Bhavsar	Auditorium
10.15-10.45	Sponsor Talk **Dr. Shubhajit Chowdhury** (IHub, IIT Mandi)	Dr. Venkatesh Chembrolu	Auditorium
10:45-11:00	Tea Break		Foyer
11:00-13:00	Special Session 10: **Neurotherapeutic Innovation: Integrating Advanced Technologies and Holistic Approaches**	Dr. Tharun Reddy	Hall A
	Special Session 11: **Ancient Healing Practices and Modern Psychology: Exploring Mind, Body, and Environment**	Dr. Amrita Sharma	Hall B
	Special Session 12: **Reincarnation and other Selected Topics in IKS**	Dr. Kunal Mooley	Hall C
13:00-14:00	Lunch Break		Lawn
14:00-16:30	Regular Session 11: **Neurocognitive Dimensions of Meditation and Biofeedback**	Prof Chayan Nandi, IIT Mandi	Hall C
	Regular Session 12: **IKS and the Continuum of Consciousness**	Prof. Santosh Rajguru	CnP(Hall D)
16:30-17:00	Closing ceremony		Auditorium
17:00-18:00	Tea/Early dinner for those leaving		Lawn

Greetings from General Chairs

Dear Delegates and Esteemed Speakers,

We extend our warmest greetings and heartfelt welcome to each one of you for participating in the **Mind, Brain, and Consciousness Conference (MBCC–2025)**, hosted by the **Indian Knowledge System and Mental Health Application Centre (IKSMHA)** at the **Indian Institute of Technology Mandi**.

At the heart of this annual gathering lies the **Indian Knowledge System (IKS)**—a profound, holistic framework that integrates ancient wisdom with contemporary inquiry. This conference brings together researchers from diverse fields such as **neuroscience, cognitive science, psychology, Indian philosophy, and Vedantic theology**, to engage in meaningful deliberation on the nature of **mind, brain, and consciousness** from multiple perspectives.

IKS offers a unique and experiential lens for understanding consciousness. While the **brain** is seen as a physical organ responsible for perception and cognition, the **mind (manas)** is viewed as a subtle interface for processing thoughts, emotions, and memories. **Consciousness (caitanya or ātman)**, however, is considered the eternal, non-material essence—distinct from both brain and mind—that illuminates all experiences. Unlike reductionist models that equate consciousness with brain function, IKS posits that consciousness is **fundamental and universal**.

We firmly believe that **empirical science has a vital role** to play in exploring this profound topic, and it is with this vision that MBCC was conceived—to catalyze **transdisciplinary inquiry** and lay the foundation for a **science of cognitive matter**.

IKSMHA at IIT Mandi is committed to fostering such integrative research, harmonizing India's ancient knowledge with modern scientific paradigms. The Centre focuses on **mental health, consciousness studies, and societal well-being**, aiming to enrich both academic understanding and practical applications.

This year's conference has received **267 submissions**, from which **94 papers for regular sessions** and **67 posters** have been accepted. In addition, we are proud to host **10 special sessions**, featuring **29 selected papers** and **11 invited talks**. These contributions reflect the growing global momentum toward integrative and holistic approaches to mind and consciousness.

We are pleased to announce that the conference proceedings will be published by **Springer** in three volumes, along with a separate **edited book**:

Volume I: *Indian Knowledge System and Well-being*
Volume II: *Cognitive Biomarkers and BCI Applications*
Volume III: *Cognitive Neuroscience and Artificial Intelligence*
Edited Book: *Cognitive Biomarkers for Therapeutic Applications*

These publications encapsulate the rich thematic diversity of the conference, with the edited book highlighting **14 curated works** exploring diagnostic and interventional innovations in mental health and neuroscience.

At **IIT Mandi**, we are deeply invested in fostering such transformative dialogues that transcend disciplinary boundaries. We believe that true progress in understanding human cognition and consciousness demands not just technological advancement, but also sincere engagement with **cultural, philosophical, and spiritual traditions**.

We sincerely hope that the **tranquil Himalayan environment** will inspire introspection and intellectual exploration. Our dedicated team and volunteers have worked tirelessly to ensure your experience is enriching, from **sattvic food and comfortable accommodations** to **cultural programs and scenic tours**.

We thank you for your presence and contributions, and we look forward to a deeply rewarding conference together.

With warm regards and best wishes,

Prof. Laxmidhar Behera
Indian Institute of Technology Mandi
Dr. Anirban Bandyopadhyay
NIMS, Japan
Prof. Ganapati Ramanath
Rensselaer Polytechnic Institute, USA

Keynote/Plenary Talks

Meditation Described by Water Molecular Structural Changes Discovered Non-invasively by Aquaphotomics

Prof. Roumiana Tsenkova

Dr. Eng. Dr. Agr. Head of the Aquaphotomics Research Field, Kobe University, Japan

Abstract:

Aquaphotomics is a new emerging scientific and technological platform where the main concept is that water molecular structural dynamics works as a mirror reflecting all the information about the matter and energy interacting with the water molecular system. In the talk, the basics of Aquaphotomics will be described followed by an example of its application for meditation monitoring and understanding. Specific spectral pattern of the human hand called aquagram has been defined for each person before and after meditation. Spectra have been measured non - invasively by near infrared spectroscopy. Different kinds of meditation like sound, "tree" and "breath" meditation have been explored. In order to present each spectral pattern, the frequencies with high variations of absorbance intensities have been defined using multivariate analysis based on all acquired spectral data. Further on substantial difference has been found between the spectral patterns before and after meditation for each participant. The results have shown high variations of human spectral patterns before meditation and high uniformity after meditation. It has been discovered that the frequencies where higher absorbances have been observed after meditation correspond to water molecular conformations related to antioxidative stress and maintenance of cell structure.

Roumiana Tsenkova (RTs) has pioneered the area of non-invasive disease diagnosis with near infrared spectroscopy and multivariate analysis. She and her groups at University of Ruse, Bulgaria and, since 1996, her group at Kobe University, Japan, have developed a series of algorithms for in-vivo, in-vitro diagnosis and for better understanding of mammary gland inflammation (mastitis) in cows and bacteria identification. In collaboration with other laboratories and Japanese companies, R. Tsenkova initiated development of new optical probes and methods for in-vivo diagnosis of stress (heavy metals, temperature, oxidation etc.) in plants, cells, rats and different organ tissues. Recently, RTs has proposed a new way of simple illustration of the active water bands as a system characteristic called aquagram and have used it as a diagnostic kit for estrus detection and water contamination.

Roumiana Tsenkova has written more than 23 chapters in books, 120 papers and 17 patent applications. She has been a PI for more than 21 projects. She is the recipient of the Japanese Near Infrared Society Award for 1998 and the Tomas Hirshfeld International Near Infrared Spectroscopy Award for 2006. She is a member of the Editorial board of Japanese and International Journals.

The Minimalist Approach in Indian Schools of Thought as a Tool for Conflict Resolution

Prof Shrinivasa Varakhedi
Vice Chancellor of Central Sanskrit University, New Delhi

Abstract:

The concept of "Laya" - commonly understood as dissolution, absorption, or harmonisation, has deep philosophical and practical significance across various Indian schools of thought. Far from being a mere metaphysical notion, Laya embodies a minimalist and integrative approach to resolving internal and external conflicts - whether personal, intellectual, or societal. This talk explores how different darśanas (philosophical systems) such as Vedānta, Sāṅkhya, Yoga, and Buddhism approach Laya not only as a spiritual goal but also as a strategic method to transcend binaries, dissolve discord, and attain balance.

By analyzing scriptural insights, commentarial traditions, and lived practices, this lecture illustrates how the principle of Laya promotes reductionism with purpose - a conscious simplification of ego, constructs, and attachments to resolve tensions at various levels. The talk also reflects on how these ancient perspectives offer a timeless framework for contemporary conflict resolution in education, governance, dialogue, and personal development, rooted in restraint, self-awareness, and synthesis.

Prof. Shrinivasa Varakhedi is the Vice Chancellor of Central Sanskrit University, New Delhi. A renowned scholar and academic leader in Sanskrit and Indian Knowledge Systems, he has previously served as Vice Chancellor of KKSU Ramtek and Gondwana University. Under his leadership, institutions have achieved top NAAC accreditations and launched several innovative programs. A recipient of the Maharshi Badrayan Vyas Samman and honorary D.Litt. from multiple universities, Prof. Varakhedi has contributed over 50 publications and led international delegations, playing a pivotal role in bridging traditional knowledge with modern education.

Yoga for mental illness: building evidence

Dr B.N.Gangadhar
Distinguished Scientist chair, Dept of AYUSH, Govt. of India
Professor Emeritus, Dept of Integrative Medicine, NIMHANS, Bangalore

Abstract:

Yoga has demonstrated several biological effects—for example, lowering cortisol levels. The benefits of yoga have led to its professional use in clinical populations. Its therapeutic application in mental health conditions is well established. Depression, as a commonly prevalent condition, and schizophrenia, as a serious one, are examples where yoga practices, as therapeutic interventions, have shown more than modest success. Evidence-building through double-blind, placebo-controlled, randomized clinical trials has posed challenges in yoga research. This challenge is addressed by examining other objective evidence. Neurobiological effects of yoga in psychiatric conditions have been demonstrated. The direction of these effects indirectly suggests a 'normalisation' from a diseased state. Reduction in cortisol levels and increases in Brain-Derived Neurotrophic Factor (BDNF) are some examples evidencing yoga's therapeutic role in depression. Increases in oxytocin levels and brain network coherence are similar examples of its role in schizophrenia. Considering that yoga is a spiritual lifestyle, its spiritual effects—promoting mental health benefits—deserve attention. The Bhagavad Gita serves as a spiritual counselling example of yoga's role in alleviating depression. Multicentric research on the role of acclaimed spiritual practices such as yoga, especially in clinical populations, is the need of the hour.

Dr B.N. Gangadhar is a distinguished scientist and chair, Dept of AYUSH, Govt. of India. He has served as the Chairman of National Medical Commission. Earlier he was a Senior Professor and the Director of NIMHANS till 2020. Dr Gangadhar studied in the prestigious Bangalore Medical College and obtained MD Psychiatry from NIMHANS in the year 1981. Dr. Gangadhar has Published over 450 scientific articles in peer reviewed journals with nearly 14,000 citations. Dr Gangadhar has pioneered research in the area of Yoga as well as electro compulsive therapy. He is also a Professor Emeritus at NIMHANS today in the department of Integrative Medicine. Dr. Gangadgar has been honoured with the prestigious CV Raman Award and Sir M.Vishveshwarya award from the Government of Karnataka as well as he is a recipient of the Padmashree award of the Government of India.

Indian Knowledge System for an Emergent World

Prof. Gautam Radhakrishna Desiraju
Professor Emeritus, Solid State and Structural Chemistry Unit, Indian Institute of Science Bangalore

Prof. Gautam R. Desiraju is a structural chemist who has been in the Solid State and Structural Chemistry Unit of the Indian Institute of Science, Bangalore, India since 2009. Prior to this, he had been in the University of Hyderabad for 30 years. He has played a major role in the development and growth of the subject of crystal engineering. He is noted for gaining acceptance for the theme of weak hydrogen bonding among chemists and crystallographers. His books on crystal engineering (Elsevier, 1989; World Scientific, 2011) and the weak hydrogen bond in structural chemistry and biology (OUP, 1999) are particularly well known. He is one of the most highly cited Indian scientists with more than 475 research papers, 65000+ citations and an h-index of 103. He has won international awards such as the Alexander von Humboldt Forschungspreis, the TWAS award in Chemistry, and the ISA medal for Science of the University of Bologna. He has guided the Ph.D work of around 40 students and mentored around 100 post-doctoral associates. He has edited three multi-author books in solid state and supramolecular chemistry. He is a member of the editorial advisory boards of Angewandte Chemie, Chemical Communications and Journal of the American Chemical Society. He is a former President of the International Union of Crystallography. He is a recipient of an honorary doctorate degree of the Universidad Nacional de Córdoba, Argentina, Rayalaseema University, Kurnool and Gulbarga University, Kalaburagi. He was awarded the Acharya P. C. Ray Medal (2015) of the University of Calcutta for innovation in science and technology. Recently he has been conferred the van der Waals Prize of ICNI Strasbourg. He is the chairman of the governing council of the Bose Institute, Kolkata. At present he is also a distinguished Professor in UPES Dehradun and a member of the Academic Council of Rishihood University. His recent book “Bharat: India 2.0” is his first publishing venture outside the scientific domain and is concerned with the constitutional history of India and the re-imagination of India as a civilizational state rather than a nation-state. A second book on “India’s supply chains in a changing world” is in preparation. He supervised the design of an S20 whitepaper titled: Disruptive Science for Innovative and Sustainable Development.

In Defence of Mind-Body Continuum: Insights from Yoga Philosophy

Prof. Nirmalya Narayan Chakraborty

Vice Chancellor, Presidency University, Kolkata

Abstract:

This lecture aims to explore the insights from Yoga philosophy that are relevant to the contemporary philosophy of mind. The Yoga system can be viewed as advocating for the continuity of the body and the mind. Since the time of Descartes, it has been widely held that the body (material) and the mind (the mental) are radically different, the body having extension and the mind having consciousness. This led a host of philosophers to determine the exact nature of the mind-body relation, resulting in a huge body of literature. I would like to propose that the Yoga philosophy of mind could best be understood as holding that there are the realms of the mental and the physical, and that there are causal laws connecting the two. Yoga is a dualist like Descartes, but talks about causal laws connecting the two. And the nature of the connectivity is not set against the opposing nature of the two, but in terms of complementariness between the mental and the physical, unlike Descartes. This is where the uniqueness of the Yoga philosophy of mind lies. The yoga causal connection between the body and the spirit could be viewed as a prescriptive causal connection. And one way of explaining this is to understand the idea of causation as a transformation (pariṇāma), effect remaining in the cause in a latent form.

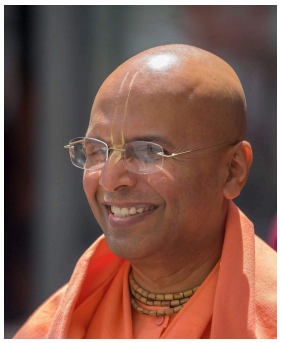
Prof. Nirmalya Narayan Chakraborty is presently Vice-Chancellor of Presidency University Kolkata. He was a Professor of Philosophy at Rabindra Bharati University, Kolkata. He has been Visiting Fellow in several Universities including the University of Glasgow, U.K., University of Pune, University of Hyderabad, and University of Naples "L'Orientale", Italy. He is the Former Member-Secretary of the Indian Council of Philosophical Research, New Delhi. His research areas include Philosophy of Language (Classical Indian and Western Analytical), Epistemology, Philosophy of Religion, and Environmental Ethics. Some of his recent publications include articles like 1. 'Contours of Post-colonial Comparative Philosophy: Modernity, Philosophy and Science' (2024), 2. 'The Challenge to Being Virtuous: A Lesson from the Mahabharata' (2024), 3. 'Realism, Anti-realism and Quietism: Has Philosophy Become Dispensable? (2022), 4. 'Tagore and the idea of Emancipation' (2020). Recently he has edited Exploring the Realm of the Mental (2024) and Glimpses of Western Philosophy (2024).

Passenger in the Chariot: Consciousness Beyond the Body, Mind, and Intellect

HH Bhakti Rasamrita Swami
Teacher, Author, Environmentalist, and Community Leader

Abstract:

The phenomenon of consciousness has captured increasing attention in recent years. It is consciousness that allows us to experience the richness of life — the fragrance of a rose, the colours of a sunset, or the music of a quiet evening. Yet, the question remains: What is consciousness, and where does it come from? Is it a product of material interactions, or is it something fundamentally different from matter? The Vedic tradition of ancient India has long been engaged in exploring the nature of consciousness. Among its foundational texts, the Katha Upanishad offers a compelling metaphor: the human body as a chariot. In this allegory, the body is the chariot, the senses are the horses, the mind is the reins, the intellect is the charioteer, and the self (Atman) is the passenger. In this paper, I will explore the chariot metaphor in detail, breaking down each component and its significance. We will examine how this ancient framework can help us think more clearly about the relationship between consciousness and the body — and how it continues to offer profound insight into the human experience, even today.



HH Bhakti Rasamrita Swami is a sannyasi (monk of the renounced order) of the Bhakti-yoga tradition and a member of the International Society for Krishna Consciousness (ISKCON). He is a disciple of Radhanath Swami and a grand-disciple of A.C. Bhaktivedanta Swami Prabhupada, ISKCON's founder acharya. He teaches the eternal message of Krishna Consciousness all over the world including India, Singapore, UK, USA, Australia and Russia. He is presently one of the trustees of ISKCON India and the President of ISKCON Belagavi (Belgaum) and Gokuldham, and has served in many important projects for the dissemination of Indian Knowledge System across the globe.

Visionary Talk

Gurudev Sri Sri Ravi Shankar

Founder of Art of Living Foundation, World Forum For Ethics in Business, International Association for Human Values

Bio:

Gurudev Sri Sri Ravi Shankar is a globally revered spiritual leader and humanitarian, known for promoting a violence-free, stress-free society through the revival of human values. He founded The Art of Living in 1981, now active in over 180 countries, and the International Association for Human Values in 1997. His initiatives span peacebuilding, trauma relief, education, women's empowerment, and prisoner rehabilitation. Gurudev has mediated in global and national conflicts, including in Sri Lanka, Iraq, and Ayodhya. His unique Sudarshan Kriya breathing technique has transformed millions of lives. He has received numerous international honours, including India's Padma Vibhushan and over 27 honorary doctorates. Gurudev's universal message of love and wisdom continues to unite people across faiths and borders.

Invited Talks

Temporal Consciousness

Narayanan Srinivasan
Department of Cognitive Science, Indian Institute of Technology Kanpur, India

Abstract:

Temporality is a fundamental property of consciousness. Philosophical theories of time-consciousness differ in terms of the temporal properties of the vehicle and content of our experience. We have proposed a nested hierarchical model of multiple timescales that consists of three time scales that could potentially explain many findings on the phenomenology of temporal experience as well as timing of cognition. The model combines three different models (i.e., cinematic, extensional, and retentional) arguing that these different possibilities correspond to different time scales arranged in a nested hierarchical fashion. The model can be used to explain different phenomena and makes predictions on how we experience time, visual experience, and temporal properties of visual experience. I will discuss some recent studies that involve visual awareness and temporal properties of experience. These empirical studies support a hierarchical framework to study temporal properties of consciousness.

Prof. Narayanan Srinivasan is currently Professor at the Department of Cognitive Science, Indian Institute of Technology Kanpur, India. Dr. Srinivasan obtained his undergraduate degree in Physics in 1988 from University of Madras, India. He completed his master's degree in electrical engineering in 1992 at Indian Institute of Science, Bengaluru, India. He completed his doctoral degree in Psychology in 1996 at University of Georgia, USA. He worked at the Centre of Behavioural and Cognitive Sciences, University of Allahabad as a professor for 17 years. He studies mental processes, especially consciousness, attention, emotions, and decision making using multiple methodologies. He was invited to deliver the Durganand Sinha Memorial Lecture in 2025.Dr. Srinivasan is a fellow of Association for Psychological Science,National Academy of Psychology (India), and Psychonomic Society.

Happy Forever: The Art and Science of Everlasting Happiness

Dr Narendra Kumar Arya

Outstanding Scientist and Director, ER & IPR, DRDO

Abstract:

Man has been in pursuit of happiness from time immemorial. Many people derive their happiness from various cultural activities like singing, dancing, festivals, celebrations, etc., whereas some people feel happy when they achieve something, whether in sports, academics or profession. Some people find their happiness while doing their duties due to a feeling of satisfaction, whereas some people feel happy about their virtues like honesty, integrity, truthfulness etc. There is a full spectrum of happiness, however, nowadays many of us find that happiness does not last long and we feel some kind of sadness, frustration or other negative feelings for quite a significant amount of time. Even those who feel happy would like to increase their happiness further in order to feel the thrills, joy and all kind of positive emotions. In fact all of us would like to be happy forever and to achieve that, it is important to understand the concepts, methods and science of happiness. Taking inputs from modern psychology and spiritual thoughts, happiness can be categorized as happiness from virtues, satisfaction in life, positive emotions and bliss. Achieving happiness in all four categories is the mantra to remain happy forever. Through virtues, a person keeps feeling happiness for a long time, for example, if a person remains honest during his professional life, he will feel happy about it, throughout his life. . Those who fulfil their duties honestly towards their profession, family, society etc., will feel extremely satisfied and happy. Similarly, positive emotions coming from dance, music, celebrations etc. make us feel happy during the activity. Happiness from inside or bliss comes from meditation and other spiritual practices. Although, happiness can be achieved through various techniques, but for it to be everlasting, we should ensure that others around us also feel it.

Bliss i.e., the Happiness coming from inside can be understood with the help of yogic literature, which explains different layers of our existence. The five layers are physical body, energy body, layer of mind, intuitive layer and the layer of bliss. In addition to this, there is a material world around us and there is a source of bliss. The layer of mind comprises psyche, intellect, consciousness and ego. Through meditation or spiritual practices, we start refining our ego and cleaning our consciousness. This leads to realizing our existence in layer of bliss and leads to self-realization. Yoga is the path of realizing our existence in all three layers. Maharishi Patanjali categorized the knowledge of yoga into eight limbs, which are yama, niyama, asana, pranayama, pratyahara, dharana, dhyana and Samadhi. The last three limbs i.e. dharna, dhyana and samadhi come under the realm of meditation. As we learn to become happy through virtues, satisfaction, positive emotions and bliss, we are able to avoid stress to a large extent and manage our time in a better way. Many times we fall into the trap of stress due to mental overload, but there are techniques and lifestyle choices which can bring us back on track. We can have a lifestyle which ensures our happiness as well as our health and prosperity. This can be called the track of happiness, which comprises of sports, cultural activities, travelling, relationships, professional duties, drawing satisfaction and feeling of bliss. If we do these things regularly, we can lead a healthy, happy and prosperous life.

The most critical thing in happiness related efforts as described above is the meditation. There are various techniques for practicing meditation, and Heartfulness meditation is one of them, which is very effective and suitable for modern

times. Lot of research has been carried out in the area of meditation and it is a well established fact that meditation improves our mental health and happiness, which in turn helps in maintaining good physiological health. Researchers have conclusively proved the advantages of meditation with the help of psychological as well as physiological parameters like heart rate variability, EEG, etc. There are a large number of spiritual organizations around the world, which help people de-stress, experience bliss and realize divinity within them. Organizations like Heartfulness, Vipassana, Art of Living, Brahmakumaris, Divine Life Society, Chinmaya Mission, Isha Foundation and Rama Krishna Mission are only a few among them. When a person wants to reach the level of realizing the Self, it becomes important to be guided by a Guru or a capable spiritual master. The master can guide the aspirant in his/her efforts as well as speed up the progress. This progress depends on our belief system and affects us at various levels including the biological level. We are made up of trillions of cells and each cell goes through the transformation process, changing us completely from inside. As a matter of fact, people from all walks of life and social strata have been found to be happy. The happiness and bliss encourages us to adopt a lifestyle close to nature, which keeps us healthy as well as sustainable for future. Concepts of spirituality and happiness can also be very useful in management, optimizing the capability of individual, team and organization by removing stress and improving inter personal skills and commitment.

Starting from happiness and moving towards bliss, adopting healthy lifestyle and positive management techniques, we can really make our world a happy world, where there is no enmity, no jealousy, no feeling of hatred and people live happily with each other as well as along with the whole creation. The beautiful creations of nature including plants and animals find their happiness and meaningful existence along with the human beings, who will be caring for them. Such a world will have abundance of pure water, pure air, natural food and everything else we hope to find in an exotic place. Happiness theories are the basic method to bring life back on track and evolve a society where everyone will be happy forever.

Dr Narendra Kumar Arya, an outstanding Scientist is the Director, Extramural Research & Intellectual Property Rights, DRDO, Ministry of Défence. He holds a B.Tech (Hons) from IIT Kharagpur, and M.Tech from IIT Kanpur followed by Ph.D. from IIT Delhi. His PhD Thesis topic is “Effect of Heartfulness Spiritual Practice Based Programs and Processes on Mental and Physiological Health Indicators”. Dr. Arya has published several research papers in reputed journals in the areas of Positive Psychology in addition to engineering disciplines. He is a Fellow of the Institution of Engineers (India) and member of various professional societies. Additionally, he is a certified Heartfulness meditation trainer Additionally, he is a certified Heartfulness meditation trainer and the author of the book "Happy Forever: The Art and Science of Everlasting Happiness."

Effect of Meditation on Brain signals

Prof. Supratim Ray
Center for Neuroscience, IISC

Abstract:

Visual stimuli induce “narrowband” gamma oscillations (30-70 Hz) that are linked to attention/binding and attenuate with aging and neurodegeneration. In contrast, meditation increases power in a broad frequency range (>25 Hz). However, the effect of meditation on stimulus-induced gamma is unknown. We recorded EEG from meditators and controls performing open-eyed meditation while gamma-inducing stimuli were presented before, during and after meditation. We found that stimulus-induced gamma, like stimulus-free gamma, is stronger in meditators. Interestingly, both gamma signatures co-exist during meditation but are unrelated and prominent in fronto-temporal and occipital regions, respectively. Further, power spectral density (PSD) slope, which becomes shallower with aging, was steeper for meditators. Meditation could boost inhibitory mechanisms leading to stronger gamma and steeper PSDs, potentially providing protection against aging and neurodegeneration.

Prof. Supratim Ray is a Professor of Neuroscience at the Indian Institute of Science (IISc). He received a B.Tech in Electrical Engineering from the Indian Institute of Technology (IIT) Kanpur and a Ph.D. in Biomedical Engineering from the Johns Hopkins University. His postdoctoral training was in the department of Neurobiology at Harvard Medical School. He joined the Center for Neuroscience at IISc in June 2011. His lab studies the neural basis of high-level cognition such as selective attention and meditation, with a focus on a brain rhythm called “gamma” (30-80 Hz), which is thought to be associated with high-level cognitive processes.

The Woven Mind - Projection of higher dimensional thoughts in Patan Patola's geometry

Shefali Vaidya
Author, Fellow-Ananta Leadership Program, Convenor-Indic Academy.

Abstract:
Ancient temple cities in India are also home to unique textile weaving clusters that not only trace cultural evolution but also project profound, timeless ideas. Varanasi, Kanchivaram, and Patan are prime examples, with my thesis focusing on the Patan Patola—a textile tradition with over a millennium of history. Patan Patola symbolises centuries of cultural evolution, representing higher-dimensional thoughts through its intricate design. The double ikat resist-dyeing technique used in the Patan Patola creates wearable textile art by pre-dyeing both warp and weft threads to achieve intricate, sharply defined geometric motifs that are woven on an unique, tilted loom with perfect alignment. This method results in reversible designs that can be worn on either side, while natural dyes provide vibrant, fade-resistant colours.

Additionally, the interplay of threads produces a floating pattern effect, adding depth and dimension. Geometric shapes that carry symbolic meanings (Nari Kunjar, meaning "woman and elephant", referring to Krishna-Gopika duality), are blended with floral designs, and human or animal figures in grids and rows extended across the saree's body, border, and the decorative end piece known as the pallu. Higher cognitive thoughts emerge in grids in human brain, here in the Patan Patola, grids are cues to layers of art superimposed one above another. Precision requirements down to 1/100th of an inch, extended production times of 6-12 months per sari, involves complex mathematical calculations for spatial reasoning in pattern alignment and sensory integration encompassing visual, tactile, and proprioceptive engagement. The speciality of the Patan Patola is that no graph papers are used to aid the weaver. The pattern is etched in the mind of the weaver. These technical aspects collectively require sustained focus and awareness and entering the 'flow state', thus aligning the weaving process with established mindfulness principles.

Shefali Vaidya is a renowned author, columnist, and media personality known for her incisive views on culture, heritage, and current affairs. She is a Fellow of the Ananta Leadership Program and serves as the Convenor at Indic Academy, where she champions Indian civilizational thought. With a background in mass communication, Shefali writes extensively in English, Marathi, and Konkani. Her work spans politics, parenting, travel, and traditional Indian art forms. A vocal advocate for Indic narratives, she is a sought-after speaker at national and international forums.

A Tale of Two Tetrads: Consciousness in Indian and Western Thought

Prof. G S Murthy
IIT Indore, and IKS National coordinator

Abstract:

The Bharateeya (Indian) philosophical tradition conceptualizes the self through a fourfold inner instrument: Manas (the sensory mind and coordinator), Buddhi (the discriminating intellect), Ahamkara (the sense of ego or "I-ness"), and Chitta (the storehouse of impressions and memories). This tetrad reflects a consciousness-centric ontology, wherein consciousness is the fundamental substratum from which matter and mental processes emerge. In contrast, many Western frameworks—rooted in materialist and dualist traditions—approach the self and consciousness through components such as the brain (neural substrate), mind (processing system), intellect (reasoning faculty), and consciousness (subjective experience), often viewing consciousness as an emergent property of complex physical systems. Thinkers such as René Descartes (dualism), Daniel Dennett (functionalism), and David Chalmers (the "hard problem" of consciousness) exemplify this evolving discourse. A comparative exploration of these two tetrads, grounding the Bharateeya perspective in classical texts such as the Yoga Vāsiṣṭha, Tattvabodha, and Upadeśa Sāra will be presented. We will highlight how these divergent models shape our understanding of mind, self, and reality, and will reflect on their implications for contemporary debates in philosophy of mind, cognitive science, and contemplative studies.

Prof. Ganti S. Murthy is a professor in Biosciences and Biomedical Engineering at Indian Institute of Technology-Indore. He is the National Coordinator for the Indian Knowledge Systems of the Ministry of Education Govt. of India. He is also the Founding Head of the Center for Indian Scientific Knowledge Systems at IIT Indore. Previously, he was a tenured professor in Biological and Ecological Engineering Department at Oregon State University for 14 years. He is the Co-founder/CEO of GRW Engineering LLC and currently serves as its Chairman, Board of Directors. He has PhD in Agricultural and Biological Engineering from University of Illinois at Urbana-Champaign. He has a M.Tech and B.Tech in Agricultural Engineering from IIT-Kharagpur and NERIST, respectively. Prof. Murthy's research group broadly focuses on developing sustainable solutions for a resource-constrained world. Dr. Murthy's research is specifically focused on sustainable bioprocessing and engineered systems analysis. They also study the nutrient-energy-water nexus with a particular focus on building the resilience of agro-ecological systems to pulse and pressure disturbances.

Time, Gravity & the Vedas: A Vedic Response to Newton, Galileo & Modern Science

Ajay Chaturvedi
Founder HarVa and KFN, IIM Rohtak

Abstract:

This lecture aims to explore the insights from Yoga philosophy that are relevant to the contemporary philosophy of mind. The Yoga system can be viewed as advocating for the continuity of the body and the mind. Since the time of Descartes, it has been widely held that the body (material) and the mind (the mental) are radically different, the body having extension and the mind having consciousness. This led a host of philosophers to determine the exact nature of the mind-body relation, resulting in a huge body of literature. I would like to propose that the Yoga philosophy of mind could best be understood as holding that there are the realms of the mental and the physical, and that there are causal laws connecting the two. Yoga is a dualist like Descartes, but talks about causal laws connecting the two. And the nature of the connectivity is not set against the opposing nature of the two, but in terms of complementariness between the mental and the physical, unlike Descartes. This is where the uniqueness of the Yoga philosophy of mind lies. The yoga causal connection between the body and the spirit could be viewed as a prescriptive causal connection. And one way of explaining this is to understand the idea of causation as a transformation (pariṇāma), effect remaining in the cause in a latent form.

Mr. Ajay Chaturvedi is the Founder - Harva, Kfn, Kullhad Economy, Author, Wef Ygl, Visiting Professor - Iim Rohtak, Imi (Strategy). He is honoured by the World Economic Forum as a Young Global Leader, Ajay is a former Citi banker with a background in engineering and management. He believes in cost-effective innovation and socio-capitalistic business models for inclusive growth. Ajay's venture, HarVa XPO, was the first all-women rural BPO and has received numerous awards, including the Manthan Chairman Excellence Award and TiE Entrepreneurial Excellence Award. He authored the bestselling book, ‘Lost Wisdom of The Swastika,’ and has been recognized by various organizations for his contributions to entrepreneurship and social impact.

Wednesday, June 4, 2025

Navami, Jyastha, Shukla Paksha, Vikram Samvat 2082

Morning Session

Schedule	Talks	Session Chair	Venue
8:45-9:30	Inauguration		Auditorium
9:30-10:00	Visionary Talk Sri Sri Ravi Shankar	Mr. Ajay Chaturvedi	Auditorium
10:00-10:45	Plenary Talk 1 HH Bhakti Rasamrita Swami	Prof. Laxmidhar Behera	Auditorium
10:45-11:00	Tea Break		Foyer
11:00-13:00	Special Session 1: **Decoding Brain Dynamics for Cognition, Consciousness, and Motor Control**	Dr. Amit Sethi	Hall A
	Workshop 1: **Dharma in Indian Katha Parampara**	Mr. Vikram Sridhar	Hall B

Special Session 1:

SS1: Decoding Brain Dynamics for Cognition, Consciousness, and Motor Control		
June 4, 10:45-13:00 Venue: Hall A Session Chair: Dr. Amit Sethi		
Dr. Amit Sethi	OTR/L Associate Professor, Department of Occupational & Recreational Therapies, Department of Physical & Athletic Training, Department of Biomedical Engineering University of Utah	Invited Talk
Dr. Nivethida Thirugnanasambandam	PhD Assistant Professor Department of Biosciences and Bioengineering IIT Mumbai	Invited Talk
Dr. Neeraj Sharma	Professor School of Biomedical Engineering IIT BHU	Invited Talk
Dr. Lalan Kumar	Associate Professor Department of Electrical Engineering IIT Delhi	Invited Talk
Dr. Shiru Sharma (Fauzia Yasmeen)	Professor School of Biomedical Engineering IIT BHU	Paper ID: 105

[105] ME-GSE: An end-to-end classification of Motor imagery Electroencephalogram signals using Graph-based Spectral Embedding

Fauzia Yasmeen (IIT BHU, Varanasi), Soinik Ghosh (IIT BHU,Varanasi), Puneet Jangra (IIT BHU, Varanasi), Neeraj Sharma (IIT BHU,Varanasi) and Shiru Sharma (IIT BHU, Varanasi).

Abstract

Electroencephalogram (EEG) signal classification is a crucial task in brain-computer interface (BCI) systems and cognitive state monitoring. However, the inherent complexity, non-stationarity, and noise in EEG signals pose significant challenges to accurate classification. We propose an end-to-end classification framework that leverages graph-based spectral embedding for EEG signal representation to address these issues. By constructing a similarity graph from EEG feature vectors and computing the graph Laplacian, meaningful spectral embeddings are generated, transforming high-dimensional EEG data into a discriminative feature space. The extracted spectral features are evaluated using ensemble classifiers, including Gradient Boosting, Random Forest, and Extra Trees, which effectively handle complex decision boundaries and improve robustness against noise. Experimental results demonstrate that the proposed approach achieves high classification accuracy and resilience to inter-subject variability. Furthermore, real-time evaluation is conducted on a Raspberry Pi 5, where the trained framework processes EEG data captured using a LiveAmp EEG system. The system efficiently classifies motor imagery tasks with an average processing time of 6.6 ms per event, validating its feasibility for online BCI applications. These findings confirm the efficacy of graph-based spectral embeddings as a powerful, scalable, and real-time-capable solution for EEG signal classification tasks.

Workshop 1: DHARMA in Indian Katha Parampara

Presenter	Vikram Sridhar
About the Presenter	Performance Storyteller; Narrative-based Facilitator; Theatre Practitioner (Performances, Workshops, Talks/Lectures, Walks); Focus on Heritage, Folklore, Ecology
Duration	2.5 – 3 hours
Date	June 4
Timing	11:00 – 13:00
Venue	Hall B
Core Concept	Dharma — a multifaceted principle encompassing justice, righteousness, ethics, duty, and universal order. Referenced in Shanti Parva (Mahabharata) and Arthashastra.
Workshop Focus	- Explore Mahabharata characters/episodes with Dharma as central theme. - Discuss Swadharma, truth, and moral dilemmas. - Analyze oral storytelling and temple tales as ethical tools. - Study regional performative forms: Yakshagana, Theyyam, Kattaikkuttu, etc. - Trace transition from textual to oral traditions transmitting Dharma.

Wednesday, June 4, 2025

Navami, Jyastha, Shukla Paksha, Vikram Samvat 2082

Afternoon Session

Schedule	Talks	Session Chair	Venue
14:00-16:00	Special Session 2: **Neuroimaging Tools for Cognitive and Clinical Neuroscience**	Dr. Sanjeev Nara	Hall A
	Regular Session 1: **Art and Music in Indian Knowledge System**	Prof. Hari Krishna Padavala	Hall C
	Regular Session 2: **Cognition and Well-being in Indian Cultural and Philosophical Traditions**	Dr. Lalan Kumar, IIT Delhi	CnP(Hall D)
16:00-16:15	Tea Break/Networking		Foyer
Starts at 15:30	Workshop 2: **Sattvic cooking - Theory**	Radha Vallabh Das	Hall B
	Workshop 2: **Live Sattvic Cooking**		Near Guest House
16:15-18:15	Special Session 3: **Kullhad Economy — A Shining Beacon for Sustainable, Glocal Economic Transformation**	Mr. Ajay Chaturvedi	Hall A
	Regular Session 3: **Mental Health through the Lens of Yoga and Ayurveda**	Mr. Parveen Kumar	Hall C
	Regular Session 4: **Mind and Well-Being: Ancient Wisdom, Contemporary Applications**	Prof. Ankush Mittal	CnP(Hall D)

Special Session 2:

SS2: Neuroimaging Tools for Cognitive and Clinical Neuroscience		
June 4, 14:00-16:00 Venue: Hall A		
Session Chair: Dr. Sanjeev Nara		
Authors	**Title**	**Paper**
Tara Chand, Duygu Zumurt Sen, Meng Li, Yuan Cao, Navkiran Kalsi and Vinod Kumar Jangir	Dynamic Adaptations in the Brainstem Arousal Nuclei During Pregnancy	205
Suman Dhaka	Sleep and Cognitive Control: Unveiling the Neural Mechanisms of Emotion Regulation and Response Inhibition Using EEG and PSG	215

Manish Kumar Asthana and Dipti Singh	Role of directed forgetting in the encoding of emotional information	244
Shivya Sharma and Amrendra Singh	Effects of brief Guided Mindfulness Meditation on resting state brain networks: An fMRI study	249

Special Session 3:

SS3: Kullhad Economy — A Shining Beacon for Sustainable, Glocal Economic Transformation **IKS-Based Technology & Entrepreneurship**		
June 4, 16:30-18:30 Venue: Hall A		
Session Chair: Mr. Ajay Chaturvedi		
Authors	**Title**	**Paper**
Mr. Ajay Chaturvedi	Vision and practical framework of Kullhad Economy	Invited Talk
Mr. Rohit Pathak	Industry Insights	Invited Talk
Mr. Ajay Chaturvedi	Innovative Presentations by Kullhad Economy students	Invited Talk
Mr. Alok Gupta and Prof. Ashutosh Khanna	Closing Remarks	Invited Talk

Workshop 2: Sāttvic Food: Nourishing Body and Mind through Ayurvedic Wisdom

Presenter	Radha Vallabh Das
About the Presenter	Author; Facilitator of Sāttvik Cooking Workshops; Yoga and Prāṇāyāma Instructor; Ayurvedic Food Profile Consultant; Corporate Diet Instructor
Duration	3 hours
Date	June 4
Timing	15:30 – 18:30
Venue	Presentation: Hall B Live Demonstration & Q/A: Near Guest House

Core Theme	Scientific and Ayurvedic foundations of Sāttvic food and its impact on cognition, mood, and mental clarity.
Session Outline	1. Theoretical Foundation (45 min) • Ayurvedic food classification: Sāttvic, Rājasic, Tāmasic • Impact on cognition and Tridoṣa balance • Prāṇa-rich foods & their effects on neurotransmitters, mood, and mental clarity 2. Live Cooking Demonstration (90 min) • Preparation of a Sāttvic meal • Techniques in cooking, food energetics, mindful eating • Applications for focus, stress reduction, and wellness 3. Q&A and Practical Integration (45 min) • Discussion on Ayurvedic nutrition, digestion, and lifestyle • Applying Sāttvic principles in modern academic/professional life
Scientific Dimensions	- Gut-brain axis and Tridoṣa correlations - Influence of food on neurotransmission, cognitive function, and mental balance - Integration of Indian Knowledge Systems into modern wellness and neuroscience frameworks

Regular Session 1:

RS1: Art and Music in Indian Knowledge System Time: 14:00-16:00, Hall C Session Chair: Prof. Hari Krishna Padavala		
Paper ID	**Title**	**Authors**
3	Role Of Learning Indian Classical Music On Levels Of Flourishing Among Indian Young Adults	Dr. Satarupa Deka And Dr. Priyanka Tiwari
9	Unmasking Narcissism: Perspectives Rooted In Indian Knowledge Systems (Iks)	Dr. Farida Virani And Arzoo Jaiswal
11	Indian Traditional Philosophical Aspects Of Architecture And Civil Engineering During The Great Kakatiya Dyanasty	Hari Krishna Padavala

15	Designing For Mindfulness: The Role Of Architecture In Fostering Mental Well-Being And Spiritual Growth	Smruti Raghani, Tejwant Singh Brar And Mohammad Arif Kamal
18	A Novel Approach To The Study Of Samkhya Karikas	Srivardan Balaji And Sohom Chakrabarty
27	Viewing Samkhya Philosophy Through The Lens Of Chromotherapy With Special Focus On Chakras Of Consciousness	Chhabi Bhandari
28	Assessing Social Desirability Bias In Decision-Making: Insights From Classic And Contemporary Approaches	Subhankar Nayak
31	Ear-Fmt: Emotional Attributes Of Ragas (Indian Classical Music) Using Foundation Models For Guided Therapies	Rajat Vashistha, Soumen Ghosh And Viktor Vegh

[3] ROLE OF LEARNING INDIAN CLASSICAL MUSIC ON LEVELS OF FLOURISHING AMONG INDIAN YOUNG ADULTS

Dr. Satarupa Deka (Assistant Professor, IILM University) and Dr. Priyanka Tiwari (Professor and HOD, Manav Rachna International Institute of Research and Studies).

Abstract

Flourishing as a less explored concept of positive well being is gaining a great attention from the researchers in the field of Positive Psychology. Similarly Indian Classical Music is emerging as a therapeutic approach in mental health and well being. The purpose of this study was to assess the relation of learning Indian Classical Music and Flourishing level. This experimental study was conducted among 30 young college going adults of Assam and Delhi, out of which 15 were Indian Classical Music learners and 15 were not. Paired t-test was administered on this sample which shows promising results of Indian Classical Music learning in increasing the level of Human Flourishing among college going young adults. The study concluded that learning Indian Classical Music from a young age could help in the enhancement of human flourishing thus providing a future recommendation for an extensive work on the effects of learning Indian Classical Music on various domains of human Psychology.

[9] Unmasking Narcissism: Perspectives Rooted in Indian Knowledge Systems (IKS)

Dr. Farida Virani (MET - Institute of Management) and Arzoo Jaiswal (MET - Institute of Management).

Abstract

The term ‘narcissism’ originates from the Greek myth of Narcissus, who fell in love with his reflection in a pond, and died staring at it for the rest of his life. According to social scientists, it is a ‘modern epidemic’. Narcissistic Personality Disorder (NPD) is often viewed through a lens of negativity, characterized by an inflated sense of self-importance, an insatiable craving for admiration, and a seeming disregard for others' emotions. However, beneath this exterior of confidence lies an inherent fragility, where criticism strikes deep, unraveling hidden insecurities. While narcissism is frequently labeled a detrimental trait, its implications are far more nuanced.

This study bridges the ancient wisdom of Indian Knowledge Systems (IKS) with modern psychological perspectives to explore the behavioral dimensions of narcissism. Ancient Indian texts such as the Bhagavad Gita and Arthashastra highlight dualities within leadership—balancing self-assurance with humility and ethical integrity. Through this lens, we examine how narcissism influences leadership qualities, emotional intelligence, and integrity in management students. Using the Narcissistic Personality Inventory (NPI) test and a sample of 100 students, this research uncovers surprising associations between narcissism and leadership effectiveness while addressing its

challenges in ethical decision-making.
By aligning findings with IKS principles, this study reframes narcissism as a double-edged trait, capable of fostering leadership potential when tempered with the values of empathy, self-regulation, and accountability taught in Indian traditions.

[11] INDIAN TRADITIONAL PHILOSOPHICAL ASPECTS OF ARCHITECTURE AND CIVIL ENGINEERING DURING THE GREAT KAKATIYA DYANASTY

Hari Krishna Padavala (National Institute of Technology Warangal).

Abstract

Traditionally, Indian engineers have presented many important aspects of architecture and engineering based on the observation from nature and other living beings. Our ancestors have used many such aspects in the construction of many monuments and temples which are serving their purpose for over 1000 years as symbol of their great technology. Vedic texts presents many important aspects of construction based on the principles of orientation (procedure used to get maximum benefits from the nature) for a proper physical and mental health of the inhabitants. In the present study, an effort is made to present the great aspects of Indian architecture and civil engineering that were adopted by the Kakatiya Dynasty of Southern India during 12th and 13th centuries.

[15] Designing for Mindfulness: The Role of Architecture in Fostering Mental Well-Being and Spiritual Growth

Smruti Raghani (Symbiosis Institute of Design,Symbiosis International University), Tejwant Singh Brar (Sushant School of Architecture, Sushant University, Gurugram, India) and Mohammad Arif Kamal (Architecture Section, Aligarh Muslim University, Aligarh, India).

Abstract

This research highlights the importance of architecture consid-ering the context of environmental change and urbanization with regard to mental health, self-enhancement and spirituality. Modern architecture usual-ly revolves around the efficient use of resources at the design stage and ap-plication but fails to take into account the more important aspects of a hu-man being which are emotional and spiritual. This particular research expands on the potential uses of built environments that were specially designed for stress and depression relief in the form of meditation spaces The paper refers to the integration of spirituality into architectural design by focusing on the past as well as the present. In antiquity, sacred geometry and the context of the place were often converted into buildings to appeal to the people on a religious level. There is room in modern design to use geo-metric shapes and on a larger scale the concept of sacred geometry to create physically appealing environments with complex design. The geometry of structures such as a pyramid and dome has been suggested to aid in directing specific energy for emotional and mental support. The research supports designs that nurture the environment while at the same time being functional to people and therefore leading to a space that is meant for rehabilitation. The interrelation of forms, spaces and physical en-ergy thereby essential principles and the main aim of design are achieved. Architects can make places better for mindfulness and well-being by aligning form, space, and energy. This study highlights the need to change architec-tural practices to focus more on emotional and spiritual needs. This change can help create a better connection between people and the spaces they in-habit.

[18] A Novel Approach to the Study of Samkhya Karikas

Srivardan Balaji (Indian Institute of Technology Roorkee) and Sohom Chakrabarty (Indian Institute of Technology Roorkee).

Abstract

Samkhya Karika is the oldest surviving text dedicated to the Samkhya Darshana. Isvara Krsna, the author, skillfully summarizes the essence of Samkhya Darshana in seventy-two verses, or Karikas. However, this brevity comes at the cost of clarity when one attempts to study the text. Several commentaries have been written to explain these Karikas in-depth, yet no such attempt has been made to connect the missing links inherent in the structure of the text. Two Karikas illustrating the same concept are found at radically different places in the text. Moreover, some Karikas are found to cover multiple concepts. To overcome this problem, this paper has adopted a new approach of grouping the Karikas based on a topic/concept explained in them. This approach streamlines the understanding of the various concepts in Samkhya Darshana as a group of Karikas elegantly explains an entire concept. It saves time and effort, and focus can be placed on understanding the concepts rather than dealing with the complex structure of the ancient text. This method can be beneficial in incorporating Samkhya into modern pedagogy, ensuring that the ancient wisdom can be passed onto future generations in an effective manner.

[27] Viewing Samkhya Philosophy through the Lens of Chromotherapy with Special Focus on Chakras of Consciousness

Chhabi Bhandari (Dayalbagh Educational Institute, Dayalbagh, Agra- 282005).

Abstract

The paper examines the integration of Sāṁkhya philosophy, an ancient Indian dualistic system, with chromotherapy, a holistic healing modality that uses colours to restore balance and promote well-being. Sāṁkhya posits that the universe is governed by two eternal principles: Puruṣa (pure consciousness) and Prakṛti (primordial matter). Prakṛti manifests through the interplay of three guṇas—Sattva (harmony), Rajas (activity), and Tamas (inertia)—which influence human experience and consciousness. Liberation (Kaivalya) is achieved when the guṇas are transcended, allowing Puruṣa to realize its distinct, unconditioned nature.

Chromotherapy, rooted in the belief that colours carry specific vibrational frequencies, aims to harmonize the mind, body, and spirit by balancing energy centers (chakras) and addressing emotional and physical imbalances. Each colour aligns with a particular guṇa and chakra, offering targeted benefits: calming colours like blue and green enhance Sattva, energizing colours like red and orange channel Rajas constructively, and grounding colours like indigo aid in transforming Tamas.

The paper explores how chromotherapy can balance the guṇas within Prakṛti, thereby facilitating physical and emotional harmony and advancing spiritual growth. It demonstrates how the alignment of the chakras through chromotherapy fosters deeper self-awareness, heightened consciousness, and a pathway toward Kaivalya. This interdisciplinary approach offers promising insights into fostering well-being and spiritual evolution. The hypothesis of the paper is, “Chromotherapy can balance the guṇas (sattva, rajas, tamas) within Prakṛti, thereby facilitating spiritual upliftment and alignment with Puruṣa”, and has been proven correct.

[28] Assessing Social Desirability Bias in Decision-Making: Insights from Classic and Contemporary Approaches

Subhankar Nayak (Birla Institute of Technology and Science, Pilani).

Abstract

Social desirability bias, the tendency to present oneself in a favorable light, can distort decision-making and assessments in various high-stakes contexts, such as job interviews and psychological evaluations. This paper empirically compares traditional and contemporary methods for evaluating socially desirable responses in evaluations. By analyzing the advantages and limitations of both approaches, the study highlights how cognitive effort and time investment in newer methods may provide incremental benefits in specific situations. Findings suggest that combining simpler and more complex methodologies can offer a more efficient and nuanced approach to evaluating socially desirable content. These insights are crucial for improving decision- making accuracy in both organizational and psychological evaluations, with implications for fields such as personnel selection and consumer behavior research.

[31] EAR-FMT: Emotional Attributes of Ragas (Indian classical music) using Foundation Models for guided Therapies

Rajat Vashistha (Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, Brisbane, Australia), Soumen Ghosh (QIMR Berghofer Medical Research Institute, Brisbane, Australia) and Viktor Vegh (Australian Institute for Bioengineering and Nanotechnology, The University of Queensland).

Abstract

Music has long been recognized for its therapeutic potential, particularly in pain management and alternative treatments. Music therapy, however, is often culturally contextualized to maximize its effectiveness. In the Indian tradition, ragas, integral to Indian classical music, have historically been employed in Ayurvedic practices (raga-chikitsa) to evoke specific emotional states and compliment healing. Despite this, the wide array of ragas remains underexplored in understanding the relationship between their structural elements and the emotions they elicit. Current approaches rely predominantly on handcrafted features and limited datasets, often overlooking the potential of high-dimensional, multimodal frameworks. To address these gaps, this study curated a comprehensive dataset from YouTube and fine tuned an OpenAI-based audio model (Whisper, using contrastive loss to create robust audio embeddings, focusing on self-supervision and generalization), underscoring the importance of adapting foundation models to decode the complex emotion-raga interplay. We identified several features weakly correlated but with statistical significance, with specific emotional attributes, such as ragas such as Raag Nat Kamod and Raag Yaman display narrow distributions, suggesting consistency in the perception of joy. In contrast, ragas like Raag Marwa, Todi and Miyan Malhar exhibit wider interquartile ranges. Our findings reveal culturally and personally influenced score between ragas and emotions, providing a foundation for future studies, including neuroimaging research on raga-induced emotional responses.

Regular Session 2:

RS2: Cognition and Well-being in Indian Cultural and Philosophical Traditions Time: 14:00-16:00, CnP (Hall D) Session Chair: Dr. Lalan Kumar, IIT Delhi		
Paper ID	**Title**	**Authors**
51	Antaḥkaraṇa In The Śrīmadbhagavadgītā : A Study Of Arjuna's Thought Process	Neelam Kumari And Vivek Sharma
61	"Exploring The Efficacy Of Bhagavad Gita -As It Is In Managing Depression And Anxiety In College Students: A Case Study"	Shubham Kanungo And V G Sadh
67	Person Perception: Unveiling Confidence In	Kshipra Moghe, Kajal Raut And Saniya

[51] Antaḥkaraṇa in the Śrīmadbhagavadgītā : A Study of Arjuna's Thought Process

Neelam Kumari (Research Scholar, Department of Sanskrit, Panjab University, Chandigarh) and Vivek Sharma (Assistant Professor, Department of Sanskrit, Government College Solan, H.P.).

Abstract

Antaḥkaraṇa, an internal organ, is expounded upon in various schools of Vedic Philosophy. Vedānta delineates Antaḥkaraṇa into four components : Manas, Buddhi, Citta, and Ahaṅkāra, as part of the explanation of sūkṣma śarīra. Conversely, the Sāṃkhya school teaches three components : Manas, Buddhi, and Ahaṅkāra. Meanwhile, Yoga focuses solely on Cittaṃ and its vṛttis. The Nyāya-Vaiśeṣika schools, on the other hand, acknowledge manas as Antaḥkaraṇa through which buddhi - the knowledge is experienced by the Self. Here the self is the Adhikaraṇaṃ, the foundation of that knowledge (Jñānādhikaraṇamātmā). These schools of Vedic philosophy have a rich history of profound contemplation on the intangible processes of the brain, including memory, knowledge, and emotions such as pleasure, sorrow, and hatred. It is crucial to recognize that these schools are rooted in the Vedas, particularly the Upaniṣad portion of the Vedas. The Śrīmadbhagavadgītā (SBG) is widely acknowledged as the essence of the Upaniṣads (sarvopaniṣado gāvo dogdhā gopālanandanaḥ pārtho vatsaḥ sudhīraḥ bhoktā dugdhaṃ gītāmṛtaṃ mahat). This leads to the question of whether the SBG elaborates on the Antaḥkaraṇa, and if so, how it is described. Furthermore, it prompts inquiry into whether all four components - Manas, Buddhi, Citta, and Ahaṅkāra - are addressed, and if so, how they are treated. Additionally, there is interest in understanding the relationships among these elements and the Self. This study aims to address these inquiries by examining the original text of the Śrīmadbhagavadgītā while focusing on Arjuna's thought process.

[61] "Exploring the efficacy of Bhagavad Gita -As it is in managing depression and anxiety in College Students: A Case Study"

Shubham Kanungo (IPS Academy, Institute of Engineering & Science, Indore) and V G Sadh (IPS Academy, Institute of Engineering & Science, Indore).

Abstract

Depression and anxiety are common mental health issues affecting college students worldwide. The Bhagavad Gita, an ancient Indian scripture, has been used for centuries as a tool for spiritual growth and self-realization. This case study explores the efficacy of the Bhagavad Gita -As it is in managing depression and anxiety in college students. A sample of 22 college students with symptoms of depression and anxiety was selected for this study. The participants were divided into two groups: a treatment group that read the Bhagavad Gita -As it is for 30 minutes

daily over a period of 6 weeks, and a control group that did not receive any intervention. The results showed a significant reduction in symptoms of depression and anxiety in the treatment group, as measured by the Beck Depression Inventory (BDI) and the Spielberger State-Trait Anxiety Inventory (STAI). The findings of this study suggest that the Bhagavad Gita -As it is, can be a useful adjunct to traditional treatments for depression and anxiety in college students.

[67] Person Perception: Unveiling Confidence in Judgment

Kshipra Moghe (COEP Technological University), Kajal Raut (COEP Technological University) and Saniya Atalatti (Savitribai Phule Pune University).

Abstract

This research delves into the intricate process of person perception, exploring how individuals form impressions and make judgments about others' personality traits based on facial appearances. Through a survey conducted among engineering students at COEP Technological University, Pune, involving 246 participants, this study investigates the confidence and accuracy of judgments regarding sociability, morality, and competence. Utilizing a Likert scale and AI-generated facial images, participants assessed personality traits and their confidence in facial judgments. The analysis reveals notable gender differences in the accuracy of score predictions, with females demonstrating higher accuracy than males in forming impressions based on first encounters. Additionally, females exhibit greater accuracy in judging personality traits from facial expressions compared to males, highlighting their nuanced perception abilities. Moreover, behavior emerged as the most reliable indicator of personality traits beyond facial appearance, emphasizing the multifaceted nature of impression formation. Overall, this study contributes to the understanding of social cognition processes and the importance of considering factors beyond facial appearance in accurately assessing personality traits.

[72] Ahimsa as the Fundamental Yama and Its Enablers and Disablers in Contemporary Urban Setting

Kumar Utkarsh (IIT Roorkee), Prateek Singh (IIT Roorkee) and Sohom Chakrabarty (IIT Roorkee).

Abstract

Yoga philosophy is one of the nine classical philosophies of ancient India, with the Yoga Sutras of Patanjali being its most prominent treatise. In this text, Patanjali introduces the concept of Ashtanga Yoga, an eightfold path leading to Kaivalya (ultimate liberation). The first step of this path is Yama—ethical restraints to be adopted by an individual. Among the Yamas, Ahimsa (non-violence) holds a central place. It transcends personal practice to serve as a social virtue that fosters harmonious relationships. This paper critically examines Ahimsa from three metaphysical levels in which it can occur, and positions it as the fundamental Yama. Further, several intrinsic and extrinsic factors—enablers and disablers—are analyzed that either facilitate or hinder the adoption of Ahimsa in contemporary urban society.

[73] Meaning Agnostic Reorderable phrases in Hindi sentences

Mayank Mehta (IIT Mandi).

Abstract

This report delves into the inherent syntactic flexibility of Hindi sentences, a characteristic that dis- tinguishes it from many other languages. Hindi's inflectional grammar, marked by suffixes and particles, allows for the reordering of sentence components—such as subjects, verbs, and objects—without altering their fundamental meanings. This unique property presents both linguistic and computational challenges, particularly in parsing and generating grammatically correct sentences while preserving their semantic integrity. The study investigates this flexibility through the lens of modern computational linguistics, proposing methodologies for systematically identifying splitting points within sentences that allow for meaning- preserving reordering. By leveraging the role of vibhaktis (case markers), the report explores how these grammatical elements facilitate syntactic variations and contribute to sentence meaning. Furthermore, the work introduces a machine learning model capable of segmenting

sentences into reorderable phrases. This model's architecture—featuring embedding layers, Long Short-Term Memory (LSTM) networks, and dense layers—is designed to capture both the semantic and syntactic intricacies of Hindi. Through rigorous training and testing over a diverse dataset of manually segmented sentences, the model demonstrates superior performance in segmentation accuracy and sentence generation. The report also presents a comparative analysis of the proposed model against state-of-the-art open- source AI models, including LLaMA, ChatGPT, and Mistral. Metrics such as precision, recall, F1 score, and Boundary Edit Distance (BED) highlight the proposed model's efficacy, showcasing its ability to out- perform existing solutions in maintaining grammatical and semantic integrity during sentence reordering. This research contributes significantly to computational linguistics, particularly for languages with flexible syntax, and lays a foundation for future work in linguistic modeling, including the incorporation of advanced neural architectures and synonym-based sentence generation techniques.

[85] Indian Knowledge Systems (IKS) in Personality Assessment: A Culturally Rooted Approach to Identifying Personal Traits

Tulsee Giri Goswami (CENTRAL UNIVERSITY OF RAJASTHAN).

Abstract

This paper explores the integration of Indian Knowledge Systems (IKS) in personality as-sessment, offering a culturally rooted framework that extends beyond Western psychologi-cal models. While contemporary theories like the Big Five, MBTI, and Jungian Typology focus on cognitive and behavioral dimensions, IKS-based models incorporate conscious-ness, ethics, and holistic well-being. Key frameworks such as the Triguna Theory (Sattva, Rajas, Tamas), Panchakosha Model (five layers of existence), and Ayurvedic Typology (Vata, Pitta, Kapha) provide a deeper understanding of personality traits and their influence on mental health, leadership, and cognitive performance. Empirical research suggests that yogic practices, mindfulness, and Ayurveda-based interventions enhance emotional resilience, decision-making, and self-awareness. A comparative analysis with contemporary psychology highlights the neuroscientific rel-evance of IKS-based models, with emerging evidence linking Triguna with neurotransmitter activity and meditative states with cognitive enhancements. However, challenges in stand-ardization and empirical validation require interdisciplinary collaboration between psychol-ogy, neuroscience, and traditional Indian knowledge. The paper calls for an integrative approach to personality assessment, bridging ancient wisdom with modern scientific inquiry. Future research should focus on empirical valida-tion, AI-driven assessments, and cross-cultural applications to establish IKS as a globally recognized framework in personality science

[91] Ayurveda and Mental Health: A Holistic Approach in Integrating Traditional and Modern Therapies

Shalini Rai (All India Institute of Ayurveda) and Vijay Kumar Rai (GOVERNMENT AYURVEDA PG COLLEGE AND HOSPITAL, VARANASI).

Abstract

Ayurveda, the ancient system of Indian medicine, provides a holistic approach to mental health by addressing the mind-body connection and identifying the root causes of mental disorders. Unlike conventional psychiatry, which primarily targets symptomatic relief through pharmacological and psychotherapeutic methods, Ayurveda employs personalized interventions such as herbal formulations, Panchakarma detoxification, dietary modifications, yoga, and meditation. These therapies have been traditionally used to manage psychiatric conditions like schizophrenia, depression, anxiety, and obsessive-compulsive disorder (OCD). Evidence from Case Reports and Clinical Practice Numerous case reports and clinical studies highlight the efficacy of Ayurvedic treatments in mental health management. Research on Brahmyadi yoga demonstrates its effectiveness in schizophrenia, with significant symptom reduction in multiple studies (Mahal et al., 1976; Ramu et al., 1983; Rao et al., 2011). Additionally, polyherbal formulations like Smriti Sagara Rasa and Unmadagajakesari Rasa have shown potential in addressing negative symptoms of psychotic disorders (Tripathi et al., 1993; Chaudhari et al., 2002). Panchakarma therapies, including Nasya, Virechana, and Shirodhara, have been successfully used for major depressive disorder,

generalized anxiety disorder, and insomnia, leading to significant clinical improvements (Goyal et al., 2022; Thasni et al., 2022; Karuvanthodi et al., 2023). Furthermore, integrating Ayurvedic therapies with conventional psychiatric care has been reported to enhance outcomes, reducing medication dependency and improving patient well-being (Chandrasekhar et al., 2012; Patgiri et al., 2017). Integrated Approach in Addressing Mental Health A combined approach incorporating Ayurveda and conventional medicine offers a promising pathway for comprehensive mental health management. While pharmacological treatments and psychotherapy focus on symptom control, Ayurveda emphasizes overall well-being by addressing physical, emotional, and spiritual health. Research suggests that Ayurvedic interventions, such as Ashwagandha supplementation and Shirodhara, when used alongside selective serotonin reuptake inhibitors (SSRIs), improve anxiety and depression outcomes. Additionally, case studies report that Panchakarma therapies, when integrated with antidepressant medications, significantly enhance symptom relief and quality of life. Conclusion The integration of Ayurvedic practices with modern psychiatric care offers a comprehensive and patient-centred approach to mental health. By targeting the root causes of mental disorders and promoting holistic well-being, Ayurveda complements pharmacological treatments and psychotherapy, potentially leading to better long-term outcomes. Future research and large-scale clinical trials are essential to further validate the benefits of this integrative approach, ensuring its broader acceptance in global mental health care.

[178] The Dynamics of Thought Transformation: A Cognitive Perspective on Kaikeyī's Decision-Making process in Ayodhya Kanda of Ramayana

Banani Basistha (University of Hyderabad), J. S. R. Prasad (University of Hyderabad) and Arif Ali (Institute of Human Behaviour & Allied Sciences (IHBAS)).

Abstract

The Ramayana, an ancient Indian epic, offered profound insights into human psychology by depicting various shades of cognition, emotion, morality, and decision-making. Kaikeyī's cognitive and emotional transformation, which resulted in her demand for Rama's exile, exemplified persuasion, cognitive bias, and decision-making influenced by emotional distress. The present study aimed to examine the regressive changes (positive to negative) in Kaikeyī's thought process, wherein her initial positive disposition shifted towards a negative outlook due to Manthara's influence, through the perspective of cognitive psychology. To achieve this, an analysis of the Valmiki Ramayana (Srimad Valmiki Ramayana) was undertaken, with a specific focus on the 7th, 8th, and 9th Sargas of the Ayodhya Kanda. The researcher examined the Sanskrit verses along with their English translations and interpreted them in relation to key cognitive psychological concepts, including perception, attention, cognitive biases, and decision-making patterns. The findings indicated a gradual yet significant cognitive transformation. At the outset, Kaikeyī responded to Rama's coronation with joy and rational acceptance, displaying cognitive stability. Manthara's persuasion induced a cognitive shift by exploiting biases such as loss aversion and selective attention. Kaikeyī progressively concentrated on the perceived threat to Bharata's succession, engaging in catastrophic thinking that exaggerated the consequences of Rama's ascension. It eventually resulted in cognitive reframing, wherein she fully assimilated Manthara's perspective and reconstructed the situation as a crisis. Under heightened emotional distress, her decision-making became impaired, culminating in the demand for Rama's exile. The study highlighted the psychological mechanisms underlying thought manipulation, cognitive distortions, and externally influenced decision-making.

Regular Session 3:

RS3: Mental Health through the Lens of Yoga and Ayurveda Time: 16:30-18:30, Hall C Session Chair: Mr. Parveen Kumar		
Paper	**Paper Titles**	**Authors**

ID		
96	Shaucha As The Fundamental Niyama And Its Enablers And Disablers In Contemporary Urban Setting	Prateek Singh, Kumar Utkarsh And Sohom Chakrabarty
97	Marma Point Detection And Personalized Ayurvedic Diagnosis Using Computer Vision	Pragyananda Sahoo, Neel Mani, Shastri Nimmagadda And Amit Das
102	Mental Health, Mental Illness And Happiness: A Yogic Perspective In Light Of Patanjali Yoga Sutras	Mouli Karmakar
106	Rituscape: Automatic Season-Based Virtual Environment Generation From Indian Classical Ragas	Rahul Kumar Rai, Reshu Bansal And Shashi Shekhar Jha
130	Perceived Parenting Style And Self-Compassion In Emerging Adults: Psychological Insights And Indian Knowledge System Solutions	Reshma N.S, Anu Singal, Sushma N.S, Himani Kotian, Vasudha K.G, Radhika K, Sharanya Shetty And Shyamasundaran K
131	The Role Of Prakriti In Mental Health: Understanding Psychological Resilience Through Ayurvedic Constitution	Indu Sabu, Krishna Rao, Mruthyumjaya Rao Meda And Pratibha P Nair
135	A Case Study On Yogic Perception: Insights From Eeg Data Analysis	Parveen Kumar, Prerna Singh, Lokeswara Kumar Vijanapalli, Jyotiranjan Beuria and Lalan Kumar

[96] Shaucha as the Fundamental Niyama and Its Enablers and Disablers in Contemporary Urban Setting

Prateek Singh (IIT Roorkee), Kumar Utkarsh (IIT Roorkee) and Sohom Chakrabarty (IIT Roorkee).

Abstract

Yoga philosophy is one of the nine classical philosophies of ancient India, with the Yoga Sutras of Patanjali being its most prominent treatise. In this text, the concept of Ashtanga Yoga is introduced, which is an eightfold path leading to the state of ultimate liberation, referred as Kaivalya. The second step of this path is Niyama, which are personal observances prescribed to be adopted by an individual. Among the Niyamas, Shaucha (Purity or Cleanliness) holds a central place. This paper critically examines the Niyama of Shaucha from three metaphysical levels in which it can occur, and positions it as the fundamental Niyama, in the sense that it is a primer to follow the other Niyamas. Further, several enablers and disablers are analyzed that respectively facilitate or hinder the adoption of Shaucha in contemporary urban society.

[97] Marma Point Detection and Personalized Ayurvedic Diagnosis using Computer Vision

Pragyananda Sahoo (Dev Sanskriti Vishwavidyalaya), Neel Mani (Dev Sanskriti Vishwavidyalaya), Shastri Nimmagadda (Dev Sanskriti Vishwavidyalaya) and Amit Das (ICFAI University).

Abstract

Mental health constitutes a global issue, with a significant number of individuals experiencing dysfunction due to depression, anxiety, prevalent mental disorders, daily problems or stress, alcohol and substance use disorders, and psychoses. Marma therapy addresses both mental and physical issues with contemporary methods. It is an old Indian Ayurvedic practice that involves the treatment of certain places on the human body. Marma therapy effectively alleviates stress, anxiety, sadness, fears, and phobias, as corroborated by multiple studies. We collect images of users

and subsequently analyze them based on many characteristics, including body type (Vata, Pitta, Kapha), height, present symptoms, structure, and medical history. This study presents a thorough methodology for delivering individualized recommendations of marma points to individuals. This solution could profoundly affect Ayurveda and mental health.

[102] Mental Health, Mental Illness and Happiness: A Yogic Perspective in Light of Patanjali Yoga Sutras

Mouli Karmakar (Abhyudayam).

Abstract

Human mind has an innate nature of being drawn outwards towards the external environment easily (B.G 6.34), creating barrier to achieve the state of ever joy and bliss. Stress, with its roots dated back to ancient times, became the leading villain in modern world [4]. Mental health and happiness have been central themes in yogic philosophy, particularly in the Patanjali Yoga Sutras, written around 2000 years ago [21]. This paper explores the yogic concept of Vrittis (mental modifications), Kleshas (Afflictions of mind), Antarayas (Obstacles) and Vikshepa Sahabhuvas (Symptoms of distraction), analysing their implications on mental well-being, stress, and psychological resilience. A qualitative analytical approach has been adopted in this study to identify the potential stressors which obstructing one's path to happiness and self-realization. Various form of suffering (Dukha) as identified by Indian philosophical framework are addressed along with modern psychiatric perspectives. To address these psychological challenges, Patanjali propounded a structured approach through Ashtanga Yoga (Eightfold Path), emphasizing ethical discipline, meditative practices, and self-regulation. Additionally, transformative tools like Abhyasa-Vairagya (Continuous practice and detachment), Kriya Yoga (Yoga of Action), Pratipaksha Bhavana (Cultivating positive counter-thoughts), and Chitta Prasadanam (Purification of consciousness) are explored as remedies to overcome mental disturbances and achieve happiness. The findings from systematic review of case studies on mental illness like Generalised Anxiety Disorder (GAD), Major Depressive Disorder (MDD), Post-Traumatic Stress Disorder (PTSD) and Schizophrenia, highlights the relevance of integrating these timeless yogic guidelines as proposed by Maharshi Patanjali, into contemporary mental health practices in clinical as well as non-clinical setting [25]. This study emphasizes the efficacy of ancient wisdom in fostering emotional resilience, reducing psychological suffering, and equip an individual for coping with day-to-day stressors while maintaining emotional-mental well-being. This framework of Ashtanga Yoga paves the ultimate way to state of everlasting happiness.

[106] RituScape: Automatic Season-Based Virtual Environment Generation from Indian Classical Ragas

Rahul Kumar Rai (IIT Ropar), Reshu Bansal (IIT Mandi) and Shashi Shekhar Jha (IIT Ropar).

Abstract

Indian classical ragas are intrinsically linked to particular emotions, times of day, and seasons, creating a rich multisensory experience. We present RituScape, a novel system that automatically adapts virtual environments according to each raga’s seasonal context. Our approach utilizes a curated dataset of ragas spanning six seasonal classes (Ritus), alongside a CNN-based spectrogram analysis that achieved an 88.4% classification accuracy in mapping ragas to their associated seasons. Essential musical features such as tempo, intensity, mood, and ornamentation are also extracted and mapped onto dynamic weather parameters— including wind speed, precipitation, fog density, temperature, and ambient lighting—resulting in immersive VR settings that reflect the raga’s emotional and seasonal essence. In a mixed-methods user study, RituScape received a mean overall satisfaction score of 4.2 out of 5, indicating heightened immersion and stronger emotional connection when experiencing ragas in these seasonally adapted environments. This demonstrates the system’s promise for cultural preservation and interactive media applications. Demo and additional materials available on GitHub*.

[130] Perceived Parenting Style and Self-Compassion in Emerging Adults: Psychological Insights and Indian Knowledge System Solutions

Reshma N.S (Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Karnataka), Anu Singal (Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Karnataka), Sushma N.S (Amrita School of Ayurveda, Amrita Vishwa Vidyapeetham, Kollam, Kerala), Himani Kotian (Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Karnataka), Vasudha K.G (Kateel Ashok Pai Memorial Institute of Allied Health Sciences, Shivamogga, Karnataka), Radhika K (Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Karnataka), Sharanya Shetty (Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Karnataka) and Shyamasundaran K (Amrita School of Ayurveda, Amrita Vishwa Vidyapeetham, Kollam, Kerala).

Abstract

This study explores the impact of perceived parenting styles on self-compassion in emerging adults. Both the Indian Knowledge System (IKS) and modern psychological theories highlight the role of effective parenting in shaping self-perception, emotional resilience, and overall well-being. Self-compassion develops when children feel accepted and supported, fostering confidence and resilience. Ancient Indian text, Chanakya Niti, proposes a phased approach to parenting: nurturing care in the first ten years, discipline and guidance in the next ten, and a transition to mutual respect and friendship from sixteen onward. This aligns with modern theories that emphasize parental warmth, structured guidance, and autonomy support for emotional maturity. A cross-sectional study was conducted with 110 participants aged 18 to 29 using the Parenting Styles Questionnaire and the Self-Compassion Scale. Results revealed that permissive and authoritative parenting styles positively correlate with higher self-compassion. The results of the study indicate that the permissive parenting style of both parents is significantly positively related to self-compassion and its sub-components self-care, self-criticism and self-compassion. Authoritative parenting was significantly linked to self-care and self-compassion, while authoritarian parenting was negatively associated with self-compassion, self-care, and self-criticism. Although authoritative parenting showed the highest mean for self-compassion, differences across parenting styles were not statistically significant. IKS provides insight into this by emphasizing dynamic parenting across developmental stages. By emerging adulthood, parenting should ideally transition into a supportive, friendship-like role, building on earlier stages of affection and discipline. A balanced parenting style—integrating care, discipline, and autonomy—promotes self-confidence and reduces self-criticism and emotional distress.

[131] The Role of Prakriti in Mental Health: Understanding Psychological Resilience Through Ayurvedic Constitution

Indu Sabu (RESEARCH OFFICER, CENTRAL AYURVEDA RESEARCH INSTITUTE,BHUBANESWAR,CCRAS,Ministry of Ayush,Govt of India), Krishna Rao (RESEARCH OFFICER,CENTRAL AYURVEDA RESEARCH INSTITUTE,BHUBANESWAR,CCRAS,Ministry of Ayush,Govt of India), Mruthyumjaya Rao Meda (DIRECTOR,CENTRAL AYURVEDA RESEARCH INSTITUTE,BHUBANESWAR,CCRAS,Ministry of Ayush,Govt of India) and Pratibha P Nair (Assisstant Preofessor, VPSV Ayurveda College,Kottakkal).

Abstract

This study investigates the relationship between Prakriti, the Ayurvedic concept of constitutional type, and psychological resilience through a comprehensive literature review. The review synthesizes classical Ayurvedic texts, peer-reviewed journals, and clinical studies to establish a theoretical and empirical foundation for understanding the influence of Prakriti on mental and emotional well-being. Key sources include foundational texts such as the Charaka Samhita, contemporary research on resilience, and clinical studies on Prakriti-based therapeutic approaches. The literature underscores the holistic nature of mental health in Ayurveda, where the mind and body are interconnected, and imbalances in one can manifest as disturbances in the other. The Tridoshas (Vata, Pitta, Kapha) and Gunas (Sattva, Rajas, Tamas) are central to shaping an individual's psychological constitution. This study highlights how different Prakriti types influence stress responses and resilience patterns, with Vata individuals benefiting from grounding practices to alleviate anxiety, Pitta individuals requiring cooling interventions for emotional regulation, and Kapha individuals needing stimulating activities to combat lethargy. The findings suggest that personalized mental health strategies based on an individual’s Prakriti can enhance

resilience and well-being. Furthermore, the integration of Ayurvedic principles with modern psychiatric approaches presents a holistic framework for mental health care, calling for further research to validate and standardize Ayurvedic interventions in contemporary mental health practice.

[135] A Case Study on Yogic Perception: Insights From EEG Data Analysis

Parveen Kumar (IIT Mandi), Prerna Singh (IIT Delhi), Lokeswara Kumar Vijanapalli (IIT Mandi), Jyotiranjan Beuria (IIT Mandi) and Lalan Kumar (IIT Delhi).

Abstract

This study investigates the neural imprints of the early stages of Viyukta or Ayukta stages of yogic perception, wherein one obtains blindfolded perception through regular contemplative practices. The par- ticipant, under blindfolded conditions, engaged in five stimuli types: shapes, emoticons, complex natural images, and mental arithmetic tasks (one-digit and two-digit). EEG data were preprocessed using EEGLAB, with source localisation, time-frequency decomposition, and functional connectivity analysis conducted in Brainstorm. Results showed distinct brain activation patterns, with maximum power amplitude in the frontal- central regions for shapes and left frontal, temporal, and occipital areas for emoticons and complex emotions. Time-frequency analysis revealed prominent activity in the alpha and delta bands during yogic perception. Functional connectivity was highest during two-digit arithmetic and shape stimuli, indicating increased cognitive engagement. This study highlights how yogic perception modulates brain dynamics, offering in- sights into cognitive enhancement and neural connectivity under blind- folded conditions that have a semblance to yogic perception.

[146] Autoethnographic Exploration of IKS and Mental Health in the Context of Grief and Trauma

Aarti Pathak (Independent).

Abstract

Today, the world faces a mental health crisis. “In 2019, 1 in every 8 people, or 970 million people around the world, were living with a mental disorder, with anxiety and depressive disorders the most common” (GHDx). The mental health frameworks are falling short in the face of such large numbers. The Indian Knowledge Systems (IKS) can play an important role here. The IKS include, among many things, sacred ancient texts, ayurveda, pranayama, yoga, text on Indian itihas/history- the Ramayana and the Mahabharata, the Hindu value system of dharma, the theory of karma and strong family ties. They are largely understudied as valuable tools to not just treat mental health issues but also as tools for their prevention and harbingers of a natural, happy way of life and being. The paper highlights the difference between the Hindu and Western ways of looking at life and death. A massive gap in mental health requirements and needs is observed. The significance of various tools of IKS is listed along with related studies on them. Finally, my lived experience of navigating simultaneously—the diagnosis of an aggressive form of breast cancer and the profound grief of losing my mother to COVID-19, with the help of various branches of the IKS is revealed. The praxis makes for a good case study. The paper elucidates how IKS offers much-needed psychological scaffolding to navigate life and is a cohesive response to modern grief and mental health crises.

Regular Session 4:

Mind and Well-Being: Ancient Wisdom, Contemporary Applications Time: 16:30-18:30, Hall D Session Chair: Prof. Ankush Mittal		
Paper ID	**Paper Titles**	**Authors**

[139] Digital Mental Health Interventions and Ayurveda: An Inclusive Approach

Sagar Sojitra (PG Scholar Mano Vigyana evam Manasa Roga, Department of Kayachikitsa, VPSV Ayurveda College, Kottakkal , Kerala , India) and Satheesh Kottil (Professor , Department of Kayachikitsa , VPSV Ayurveda College , Kottakkal , Kerala , India).

Abstract

Mental health problems affect over one billion people worldwide each year, with depression being the leading cause of disability globally. There is an urgent need for trained professionals to meet the growing demand for mental health care. To tackle this crisis, the World Health Organization (WHO) introduced the Mental Health Gap Action Programme, which proposed delivering mental health care via digital devices. The transformative power of digital technology has reshaped our lives and is revolutionizing the healthcare system. Digital mental health refers to the use of information and communication technologies in medicine and allied health professions. lack of proper measurement tools, delays in receiving care, etc. are the challenges in psychiatry that may be addressed through emerging technologies including social media monitoring, virtual reality, chatbots, applied gaming, etc. These technologies operate on a closed-loop approach to providing mental health services. Ayurveda professionals may be able to provide personalized mental health services through digital mental health interventions. Digital phenotyping can help to collect continuous and precise data regarding appetite time during internal oleation therapy (snehapana),Proper sweating therapy by sweat sensors etc. it also can provide exposure therapies by incorporating technologies like virtual reality in some Non-pharmacological treatments in Ayurveda (e.g. adravya chikitsa of Unmada).Digital mental health is a multi-billion dollar industry that plays a crucial role in providing wellness, prevention, diagnosis, and treatment. While digital interventions may not replace traditional mental health care, they can effectively bridge the gap in mental health care services.

[149] AYURVEDA AND MENTAL HEALTH- A SYSTEMATIC REVIEW STUDY

Dr.Priyal Patel (Parul Institute of Ayurved), Dr.Swapnil Raskar (Parul Institute of Ayurved) and Dr.Riya Patel (Parul Institute of Ayurved).

Abstract

Introduction: Ayurveda, an ancient system of medicine, offers a holistic perspective on mental well-being through the integration of lifestyle practices, herbal remedies, and psychological techniques. Ayurveda-based therapeutic interventions are being given to patients for their benefits in the treatment of various mental disorders but no systematic review of the overall evidence of Ayurveda intervention has been conducted. This study aims to determine the effectiveness of Ayurveda intervention in mental disorders. Methods: Electronic databases like PubMed, The Cochrane Library (CENTRAL), AYUSH research portal, Digital Helpline for Ayurveda Research Articles, and Researches in Ayurveda—online directory of PG and PhD thesis—were searched in addition to hand searching of Ayurveda journals and clinical trial registries to identify ongoing or completed trials. All studies conducting Ayurvedic interventions were included. Results: A total of 390 studies were identified; 18 met the inclusion and exclusion criteria and were systematically reviewed. The meta-analysis shows that Ayurveda interventions have their benefits in reducing symptoms of mental disorders. Conclusions: In this present review, some concerns, like small sample size, less data available of scientific studies and low methodological qualities of included studies, limit our ability to draw reliable conclusions regarding the effectiveness of Ayurveda intervention for mental disorders. However, there are some studies shown promising results also. Hence there is a large scope for conducting neurobiologically informed clinical research in the management of mental/ psychotic disorders using Ayurvedic approaches.

[153] Modern Management and leadership aspects from Indian Philosophy

Dr Ankita Sharma (IPS Academy, Institute of Business Management and Research, Indore, M. P.) and Dr Pallabi Mukherjee Mukherjee (IPS Academy, Institute of Business Management and Research, Indore, M. P.).

Abstract

Indian philosophy is deeply rooted in ancient traditions and wisdom. It explores the fundamental questions of existence, reality, ethics, and the purpose of life. It encompasses diverse systems and schools of thoughts. Each thought offers unique perspectives on metaphysics, epistemology. At the same time it is a path to spiritual enlightenment. Indian philosophy provides a strong foundation for leadership and management by emphasizing ethics. Indian Scripture gives us a deep understanding of Self-awareness, holistic decision-making and sustainability from philosophies and scripture like Bhagwat Geeta. Indian philosophy offers a profound understanding of life through Dharma (duty) and Karma (action and its consequences). The Āstika (orthodox) schools, such as Vedanta and Mimamsa, emphasize living righteously according to one's duties. At the same time, Nāstika (heterodox) traditions like Buddhism and Jainism highlight the role of Karma in shaping one's future. These philosophies promote ethical living, self-awareness, and responsibility. Even in modern leadership and management, these principles guide decision-making, integrity, and accountability. By balancing duty and mindful action, individuals and organizations can foster harmony, purpose, and long-term success in both personal and professional life. Ancient wisdom, Indian philosophical principles align with modern leadership theories and management practices, promoting responsible leadership and organizational well-being.

[157] Science of Consciousness: Vedic to Contemporary through Ayurveda – IKS

Dr Deveshwari Raskar (Physician - Daksha Ayurveda Clinic and Panchakarma Centre Vadodara Gujarat), Dr Swapnil Raskar (Parul University) and Dr. Shivam Joshi (Trimarma Ayurved Chikitsalaya Amreli Gujarat).

Abstract

Consciousness extends beyond awareness and sensation, embodying a subjective principle driving spiritual pursuit

and universal unity. Contemporary neuroscience links conscious perception to widespread brain activation, especially in fronto-parietal networks (FPN), while unconscious processes remain localized. Despite advancements in models of self-consciousness, perceptual consciousness, and global consciousness, subjective variability complicates conclusions. These studies aim to improve clinical outcomes for comatose patients through neuroimaging and treatment assessment. Ancient Indian knowledge systems (IKS) like Vedas and Bharatiya Darshanas define seven levels of consciousness. The first three—deep sleep; dreaming, and awake states—are physiological, while the higher levels, such as transcendental and cosmic consciousness, transcend sensory boundaries. These states, attainable through meditation and Pranayama, foster interconnectedness and spiritual realization, as described in Krishna Consciousness (Bhagavad Gita). However, these states challenge conventional analysis through neuroimaging or electromagnetic methods. Ayurveda bridges clinical and spiritual perspectives on consciousness, classifying pathological states as Mada (pre-conscious), Murchchha (semi-conscious), and Sanyasa (unconscious). Treatments like acupuncture, nootropic herbs (e.g., Brahmi, etc), and Panchakarma therapies (e.g., Nasya, Raktamokshana) stimulate FPN to restore function. Practicing Sadvritta (moral regimes) promotes higher consciousness. In conclusion, consciousness is a multifaceted phenomenon requiring integration of clinical and spiritual approaches. Neuroscience provides empirical insights into brain function, while Ayurveda bridges the gap of both (modern contemporary science and Ancient IKS by defining consciousness at two different breakpoints of clinical medicines and spirituality. This holistic approach not only enriches our understanding of human consciousness but also unites empirical science with time-honored spiritual wisdom.

[165] Psychological Flexibility in Indian Thought: Exploring Sthitaprajna, Triguna, and Anasakti in Young Adults

Aparna Rajeev (Clinical Psychologist, Entora Institute of Behavioural Medicine, Palakkad, Kerala) and Dr Gitanjali Natarajan (Clinical Psychologist, Private Practitioner & Chief Clinical Psychology Advisor (Niyama Digital Healthcare Ltd, Kochi).

Abstract

Indian philosophical traditions have long emphasized psychological flexibility, resilience, and well-being through concepts such as Sthitaprajna (a person of steady wisdom), Triguna (Sattva, Rajas, and Tamas), and Anasakti (non-attachment). This study examines the correlation between these constructs to distress, and persistence in goal-directed behavior among young adults in India. Data from 215 young adults (144 females, 71 males) across India were collected via Google Forms. Anasakti Scale, The Vedic Personality Inventory, Multi-dimensional Psychological Flexibility Inventory shorter global composite (MPFI), The Depression, anxiety, stress scale-21 (DASS-21) and The Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) were used to measure respective variables. Pearson's correlation indicated significant correlations such as between Triguna and values, Anasakti's emotional equipoise and acceptance, and Anasakti's persistence and fortitude with Committed Action. Significant differences emerged between males and females regarding the persistence and fortitude of Anasakti. Likewise, variations were evident in committed action, emotional equipoise, Satwa, Tamas, stress, anxiety, depression, and well-being based on marital status. Additionally, differences were observed in Triguna, anxiety levels, and well-being based on educational qualifications. This study highlights how indigenous Indian psychological concepts provide a robust framework for understanding emotional resilience and well-being. By integrating these insights into contemporary psychological practice, culturally sensitive therapeutic approaches can be developed to enhance mental health outcomes in Indian populations.

[171] Yoga for Digital Detox: Reducing Nomophobia Among Adolescents and Young Adults Through Yoga-Based Intervention

Divyansh Pandey (Indian Knowledge System of Mental Health Applications, IIT Mandi, HP 175005, India) and Arnav Bhavsar (Indian Knowledge System of Mental Health Applications, IIT Mandi, HP 175005, India).

Abstract

Particularly among teenagers in the digital age, nomophobia—the fear of be-ing without a smartphone—has become a somewhat widespread problem. This study aims to find whether a structured two-month yoga

intervention helps young adults between the ages of 16 to 20 reduce nomophobia. In this study, we considered 72 people who underwent bi-weekly yoga sessions covering physical postures, breathing techniques, and mindfulness. Both before and after the intervention, data collecting was done with the Nomopho-bia Questionnaire (NMP-Q). The pre-and post-intervention study showed a statistically significant drop in nomophobia ratings. The mean NMP-Q score dropped significantly, suggesting a significant decline in people's concern about not having their cell phones. With its focus on mindfulness and relaxa-tion techniques, the yoga intervention seems to be a suitable non-pharmacological method to reduce nomophobia in teenagers. This decrease implies that the yoga intervention, with its focus on mindfulness and relaxa-tion techniques, could be a good non-pharmacological method to reduce nomophobia in teenagers. The study emphasizes the possibility of using yoga as a sustainable approach to handle this increasing issue in the digital era since it provides a complete answer that might balance other treatments aim-ing at mobile phone dependency.

[175] Holistic Management of Stress and Anxiety: Tridosha-Specific Approach Based on Prakriti Parikshan in Ayurveda

Megha Dua (Coer University), Aruna Bhat (Coer University), Nrapendra Kumar Arya (Coer University) and Ankush Mittal (Coer University).

Abstract

Ayurveda emphasizes that health is maintained through the balanced functioning of the three doshas—Vata, Pitta, and Kapha—which regulate physiological and psychological processes. An imbalance in these doshas can contribute to various health issues, including stress and anxiety. Vata dosha, associated with movement and the nervous system, when imbalanced, leads to anxiety, insomnia, and restlessness. Pitta dosha, governing metabolism and transformation, can cause irritability, inflammation, and emotional outbursts when disturbed. Kapha dosha, responsible for stability and immunity in excess, results in lethargy, depression, and attachment issues. This study explores the correlation between Tridosha Prakriti and stress-anxiety dimensions. The findings indicate that Kapha and Pitta Prakriti individuals exhibit higher stress and anxiety levels, while Vata Prakriti shows a weaker negative correlation. These results suggest that dosha-based personalized Ayurvedic interventions may offer effective stress management strategies, aligning with the principles of holistic well-being and mental balance.

[176] Sanative Concomitants of Bharatiya Sangeet

Rajeswari C N (PES university), Dr. Pranawa Deshmukh (Center for Atomic, Molecular, and Optical Sciences & Technologies, (IIT Tirupati and IISER Tirupati)), Dr. Sharan Srinivasan (PRS Neurosciences and Mechatronics Research Institute (PNMRI) (Bengaluru, India)) and Prathiba Sharan (PRS Neurosciences and Mechatronics Research Institute (PNMRI), Bengaluru).

Abstract

Bharatiya classical ragas are musical frameworks that transcend mere melodies, impacting the human mind and emotions in profound ways. This paper explores the unique relationship between ragas and their influence on an individual's mood, emphasizing the interplay of time, seasons, and personal situations. With the rich tradition of assigning specific ragas to different times of the day and seasons, Bharatiya classical music demonstrates a remarkable ability to harmonize with the natural rhythms of life. The connection between the tonal structure of ragas and their capacity to evoke emotions such as joy, peace, compassion or introspection forms the basis of this study. This research investigates how ragas can act as a subtle yet powerful medium for mood modulation, healing, and emotional well-being.

A particular focus is placed on the interplay of the dominant note vadi and its counterpart samvadi forms the basis of the raga's emotional and melodic character, and it profoundly impacts the listener's psyche. This study highlights how these musical elements not only define the melodic identity of a raga but also resonate with the listener's inner state, evoking specific emotional responses.

Bharatiya classical music, with its intricate system of ragas, Raga Kalyani (Yaman in Hindustani music) stands out as a compelling example of how specific melodic structures can induce a sense of joy and upliftment. In this paper we focus on Raga Kalyani as an example to analyze how it's acoustic structure, neurological impact contribute to

its ability to evoke feelings of happiness, devotion, and spiritual elevation. By taking Kalyani as a case study, we aim to explore the broader inquiry into how ragas function as vehicles of human emotion and consciousness. Additionally, it discusses the practical applications of ragas in everyday life, emphasizing their potential to improve moods, foster mental clarity, and provide therapeutic benefits. By harnessing the timeless wisdom of Bharatiya classical music, humans can access a unique pathway to emotional balance, creativity, and well-being.

Thursday, June 5, 2025

Dasami, Jyastha, Shukla Paksha, Vikram Samvat 2082

Morning Session

Schedule	Talks	Session Chair	Venue
8:45-10:45	Special Session 4: **Brain, Mind, Consciousness and Mental Health: Modern and Ayurvedic Approach, their uniqueness and commonalities**	Prof. Rama Jayasundar/ Dr. Shankar Prasad	Hall A
	Regular Session 5: **Exploring Mind and Self through Indian Epistemologies**	Prof. Akhaya Kumar Nayak	Hall C
	Regular Session 6: **Emerging Technologies in Neuroscience and Mental Health**	Ms. Saumya Subramanian	CnP(Hall D)
10:45-11:00	Tea break		Foyer
11:00-13:00	Special Session 5: **Brain, Mind, Consciousness and Mental Health: Modern and Ayurvedic Approach, their uniqueness and commonalities**	Prof. Rama Jayasundar/ Dr. Shankar Prasad	Hall A
	Special Session 6: **Transcendental Phenomenology and Human Science Inquiry: Integrating First-Person Perspectives**	Dr. Richa Chopra	Hall B
	Regular Session 7: **Cognitive Biomarkers and Neurotechnologies**	Dr. Ramajayam Govindaraji.	Hall C
	Regular Session 8: **Perception, Consciousness, and Neuro-Cognitive Biomarkers**	Dr. Pushpendra Singh	CnP(Hall D)

Special Session 4 & 5

SS 4 & SS 5: Brain, Mind, Consciousness and Mental Health: Modern and Ayurvedic Approach, their uniqueness and commonalities

June 5, 09:00-13:15

Venue: Hall A

Session Chair: Prof. Rama Jayasundar and Dr. U.S.P. Adluri

Time	Session	Speaker(s)	Affiliation	Topic

09:00–09:30	Part 1: Ayurveda & Modern Medicine: Uniqueness & Commonalities	Prof. Rama Jayasundar	AIIMS, New Delhi	Differences and complementarities between Modern Medicine and Ayurveda
09:30–11:00	Part 2: Anatomy & Physiology of Brain, Mind & Consciousness	Prof. S.B. Ray	AIIMS, New Delhi	Brain, Mind, and Consciousness – Modern Anatomy & Physiology
		Dr. U.S.P. Adluri	SIVAS Institute, Secunderabad	Brain, Mind, and Consciousness – Ayurvedic Perspective
		Prof. Rama Jayasundar	AIIMS, New Delhi	Imaging the Mind, Brain, and Consciousness
11:00–11:15	Break			
11:15–13:15	Part 3: Management of Psychiatric Disorders / Manasika Rogas	Prof. Pratap Sharan	AIIMS, New Delhi	Modern Psychiatry – Overview
		Dr. Vikas Neelakandan	Eeshana Ayurveda, Kerala	Ayurvedic Psychiatry – Overview
		Prof. Sheffali Gulati	AIIMS, New Delhi	Autism Spectrum Disorders – Pediatric Neurology Perspective
		Dr. M. Prasad	Sunethri Ayurvedashram , Kerala	Ayurvedic Approach to Autism

Regular Session 5:

RS5: Exploring Mind and Self through Indian Epistemologies Time: 8:45-10:45, Hall C Session Chair: Prof. Akhaya Kumar Nayak		
Paper ID	**Paper Titles**	**Authors**
180	A Narrative Review On Classification Of Foodstuffs From (Brihatrayi), To Study Body Strengthening (Balya) And Body Nourishing (Brumhana) Foods And Recepies Which Can Be Used	Vd. Chinmayee Joshi, Vd. Kirti Joshi, Vd. Pravin Joshi And Vd.Vikrant

[180] A Narrative Review on classification of foodstuffs from (Brihatrayi), to study Body strengthening (Balya) and Body nourishing (brumhana) foods and recepies which can be used in diet of toddlers and children, alternative to dairy milk.

Vd. Chinmayee Joshi (BAMS, M.D.), Vd. Kirti Joshi (BAMS), Vd. Pravin Joshi (BAMS, M.D.) and Vd.Vikrant Jadhav (BAMS, M.D.).

Abstract

This review discusses the growing concerns about children facing issues like slow growth, delayed development, and nutritional deficiencies. It highlights the importance of a good, healthy diet for kids, focusing on the challenges linked to the way we consume dairymilk today. Problems such as added chemicals, poor processing, and contamination reduce the quality of modern dairymilk, leading to digestion issues, the formation of undigested substances (Aama), and early-onset of diseases due to overnutrition (Santarpanjanya diseases) in children. Lactose intolerance, nutrient deficiencies, and unorganized lifestyle worsen the situation. The review suggests looking into alternative, nutritious options beyond dairymilk, from authentic ayurvedic textbooks along with some recepies based on Ayurvedic principles.

[187] Wholeness and Intelligence: A Comparative Study of Bohmian Mechanics and J. Krishnamurti's Philosophy

Anand Joshi (Associate Professor in Physics).

Abstract

This paper examines the intersection of David Bohm's interpretation of quantum theory, Bohmian mechanics, and Jiddu Krishnamurti's philosophy, focusing on their perspectives on the nature of reality and intelligence. Bohm's implicate order suggests that reality is fun-damentally interconnected, with quantum nonlocality demonstrating an underlying whole-ness beyond apparent randomness. Krishnamurti, through direct perception, argues that intelligence is the ability to see without division, unconditioned by thought. Both thinkers identify fragmentation—Bohm in physics and Krishnamurti in psychology—as the primary barrier to perceiving reality as

an undivided whole. Despite their differing approaches, their insights converge on the idea that true intelligence transcends conditioned thought, revealing a deeper order that unifies both mind and matter.

[191] Mind and its transcendence to Superconsciousness: Role of Prāṇa

Swami Vidyapradananda (Assistant Professor, Ramakrishna Mission Vivekananda Educational and Research Institute, Belur Math) and Dr Richa Chopra (Assistant Professor Grade-I Centre of Excellence for Indian Knowledge Systems IIT Kharagpur).

Abstract

Manas (mind) and prāṇa (vital energy) are two mysterious and versatile entities of the sūkṣma śarīra (subtle body) of jīva, that have intrigued human thought from time immemorial. Various schools of thought, both oriental and occidental, have dealt with this subject in different degrees. The nature of mind, its ontology, its functions, its problems and methods of control – are some perennial issues that the human mind has delved into. Mind also has a spiritual dimension; the mind can transcend to higher levels of consciousness, even reach the Superconscious. Prāṇa is the infinite, omnipresent manifesting power of the universe, as well as the energy that keeps jīva alive. It also has a spiritual dimension, as prāṇa is said to be born from the Ātman and prāṇa is the active power of the cosmic Mahat. The Yoga school professes that prāṇa and mind are deeply connected and control of one can lead to control of the other. Motivated from the intertwining ontologies of mind and prāṇa, in this article, we throw light on the nature and functions of mind and prāṇa, and their interconnectedness, as delineated by various Yoga-Vedānta scriptures. We also articulate on the transcendence of mind from ordinary consciousness to Superconsciousness and the role of prāṇa in this journey. Indeed, scriptures guarantee that prolonged and religious regulation of prāṇa and practices of praṇāyama can elevate the mind to the realms of highest consciousness – the abode of true bliss.

[216] Respecting Differences: Global Harmony Through India's Philosophy of Inclusion

Mandar Choudhari (University of Mumbai) and Kanchan Taksale (Vidyalankar School of Information Technology).

Abstract

The world is a beautiful blend of cultures, religions, and identities, constantly coming together and evolving. The ancient Indian philosophy of Vasudhaiva Kutumbakam, the idea that the entire world is one family offers a meaningful perspective on global unity. This philosophy aligns with the "salad bowl" ap-proach to diversity, where different cultures coexist peacefully without losing their unique identities. In contrast, the "melting pot" metaphor emphasizes blending cultures into a single identity. The salad bowl model, rooted in the spirit of Vasudhaiva Kutumbakam, highlights the importance of respecting and valuing cultural diversity, fostering mutual understanding rather than forced assimilation. This inclusive approach is essential for building harmony and promoting peace in a globalized world. This insight is encapsulated in the an-cient shloka "अयं बन्धुरयं नेति गणना लघुचेतसाम् । उदारचरितानां तु वसुधैव कुटुम्बकम् ॥ ". These thoughts are only for people with limited thinking: that person is unfamiliar, but this one is my family member." Those with a kind heart see the world as their family (Mahopanishad, Chapter 6, Verse 71). This attitude increases diversity, and unites us in the sense of valuing the difference of each cultural sphere, while appreciating diversity in cultural sectors. Ac-cording to the figure that shows the world as a family, this is Achieved when the uniqueness of every culture is respected rather than subjugated. In line with India's all-encompassing perspective, this paper presents a model for world-wide governance.

[227] Indian Knowledge Systems and the Spirit World: Rethinking Assamese Ghost Folklore through Indigenous Epistemology

Dr. Kangkan Bhuyan (Chatia College, Sonitpur, Assam, 784175.).

Abstract

This research paper is an attempt to foreground the supernatural beings existing in Assamese folklore through the

lens of Indian Knowledge Systems (IKS). It posits these stories within the framework of local knowledge, moral philosophy, and cultural heritage. Ghosts, spirits and evil gods of Assamese folklore, shaped by oral storytelling, exist in a space that connects the visible and the invisible, reflecting the social and ethical issues of the area. Instead of simply viewing these entities as mere superstition or creations of the imaginary mind, the present paper researches ancient Indian texts, ethical principles from Dharmashastra, and aesthetic ideas to highlight the deeper meanings behind these supernatural figures. The supernatural entities of Assamese folklore not only function as purveyors of haunting experiences but also as guides, protectors, and challengers. Their existence in rural areas, shared memories and also in pages of folklore literature shows a continuity of local knowledge, where the shadowy lines between the physical and the spiritual are blurred and often obliterated. The present paper attempts to showcase how these stories concerning supernatural entities, often introduced during childhood through oral tales passed down by grandparents, act as vessels of various moral discourses, thereby highlighting themes of justice, respect, and universal order. By comparing Assamese ghost stories with other Indian folklore, this paper justifies them within the broader context of Bharatiya thought. By way of engagement with these ghostly but not always so ghastly figures, the study reinforces the importance of Indian Knowledge Systems (IKS) in maintaining cultural identity, preserving oral traditions, and providing insights into the deeper aspects of life.

[230] Mindfulness in Consciousness Paradigm: A Bhagavad Gita Perspective

Akhaya Kumar Nayak (Indian Institute of Management Indore).

Abstract

Mindfulness as a construct is understood and practiced in a multitude of ways in various traditions. Mindfulness according to Hofmann, Gómez (2017) is “a process that leads to a mental state characterized by nonjudgmental awareness of the present moment experience, including one’s sensations, thoughts, bodily states, consciousness, and the environment, while encouraging openness, curiosity, and acceptance.” Creswell (2017) offers an operational definition of mindfulness as a process of openly attending, with awareness, to one’s present moment experience. Commonly, it is believed that mindfulness intervention therapy has developed in Buddhist tradition and then the western scholars have given it a modern avatar by shading its religiosity. However, Bhagavad Gita, an Indian scriptural text also offers valuable insights into the human mind and human actions in several chapters. Chapter six of Bhagavad Gita specifically extensively discusses the traits of the human mind and ways to deal with it. Objective: This paper aims to explore the traits and processes of mindfulness in the consciousness paradigm as contained in Bhagavad Gita. Methodology: Adopting the methodology of hermeneutics, the interpretative understanding of scriptural texts, this paper follows a four-stage approach of interpretation. The stages are identification, investigation, analysis and integration (Nayak, 2018). In the stage of identification, the relevant themes, chapters, and verses (related to the theme) are identified. In the second stage, selected verses are investigated in detail with respect to their content and context. In the stage of analysis, the modern relevance of the selected themes and verses are identified, and in the final stage, the lessons are adapted for modern context. Findings: Bhagavad Gita begins with distinguishing the matter (non-living) from spirit (living) in second chapter titled sankhya yoga. It defines the living entity as an individual consciousness entity. In the thirteen-chapter, Bhagavad Gita discusses two conscious entities, individual consciousness entity (kshatrajna) and supreme consciousness entity (sarva kshatra sya Kshatrajna). Chapter seven of Bhagavad Gita mentions that there are eight material elements that constitute the body namely earth, water, fire, air, ether, mind, intelligence and false ego. Mind although a material element is considered as the main cause of the bondage or liberation of the individual conscious entity (Prabhupada, 1972, as quoted from Amrita-bindu Upanishad 2). Chapter 6 of Bhagavad Gita explains the state of human mind in general as restless (chanchalah), turbulent (pramathi), strong (bala vat), and obstinate (dridha). Therefore, it is very difficult to still it. In the same chapter Krishna suggests that suitable practice and detachment will make it possible for the mind to be stilled. This study proposes following three steps to still the mind and achieve mindfulness in consciousness paradigm as enunciated in Bhagavad Gita. Step one: To be present in the present: Bhagavad Gita 18.54 (brahma-bhūtaḥ prasannātmā na śhochati na kāṅkṣhati) advises against our indulgence in lamentations (living in the past) and daydreaming (living in illusive future). Rather it suggests to be mindful of past and future, which implies learning from past, fixing a goal to be achieved in future, but focusing on the actions in the present (Karmanye vadikaraste..). Step two: Purposeful awareness of the present: Bhagavad Gita 6.5 (uddhared ätmanätmänaà

nätmänam avasädayet, ätmaiva hy ätmano bandhur ätmaiva ripur ätmanaù) suggests that while staying and acting in present one must retreat from those mental activities which will degrade the living entity and engage the mind in those activities which deliver him. This is possible when one is fixed in a higher purpose (BG 2.59). Step three: Being situated in union with supreme consciousness Bhagavad Gita (BG 2.48, BG 12.8, BG 7.1, BG 5.29, BG 9.34, BG 18.65) suggests that complete mindfulness can never be achieved unless the individual consciousness entity is in communion with the supreme conscious entity. The extent and strength of this connection or union determines the depth of mindfulness and extent of peacefulness (BG 4.11). Conclusion: The study contributes to extant literature by proposing a new perspective of Mindfulness inspired by Bhagavad Gita. It is helpful to the practitioners of mindfulness by offering them a step-by-step process of achieving mindfulness and peace. Keywords: Mindfulness, Bhagavad Gita, Consciousness, Mind, Yoga

[232] Integrating Arudha's Concept of Vedic Astrology, Aura, and Vibrational Influence with Modern Psychology: A Holistic Approach to Understanding Personality

Ojas Shokeen (Ph.D. (Applied Psychology) scholar, Manav Rachna International Institute of Research and Studies), Ajay Chaturvedi (scientific advisory board member of IIT Mandi Conference 2025) and Anika Magan (Assistant Professor, Manav Rachna International Institute of Research and Studies).

Abstract

This paper explores the concept of Arudha in Vedic astrology and its psychological implications, particularly in relation to personality development and social perception. Arudha (ārūḍha), derived from the Sanskrit root rudh, means "that which is mounted" and represents the externally perceived self rather than one's true identity (Parashara, 7th century, Sharma, 2017). This aligns with psychological theories such as Jung's persona (Jung, 1953), Cooley's Looking-Glass Self (Cooley, 1902), and Tajfel & Turner's social identity theory (Tajfel & Turner, 1979), which explain how individuals form self-concepts based on societal feedback. Furthermore, this study examines how an individual's aura, vibrational frequency, diet, and lifestyle influence both; their projected personality and psychological well-being. Ancient Vedic texts describe how Sattvic, Rajasic, and Tamasic energies shape mental and emotional states (Charaka, 300 BCE/1949), which modern psychological research also links to cognition, mood, and behaviour (Jacka et al., 2010). Vibrational medicine and bioenergetics suggest that human consciousness emits energy fields that interact with social environments, affecting external perception (Oschman, 2000). By integrating traditional Vedic wisdom with contemporary psychological perspectives, this paper provides a holistic understanding of how internal energy and external perception shape personality. It highlights the role of yoga, meditation, and mindful eating in refining one's aura and enhancing positive social interactions (Lazar et al., 2005). Future research should explore empirical methods to validate these insights, bridging ancient spiritual science with modern psychology for a deeper understanding of personality formation and well-being.

[240] A Correlational Study of Vedic Personality Types, Tridoshas, Mental Health And Resilience

Chitra Kashyap (IILM University Gurugram) and Santosh Vishvakarma (dsvv).

Abstract

The research explores the relationship between Tridoshas (the three bodily humors), Trigunas (Qualities), mental health, and resilience in a sample of 90 participants. Using a correlational design, the study administered four questionnaires: the Vedic Personality Inventory, a self-assessment questionnaire to determine Prakriti (individual constitution), the Mental Health Inventory, and the Brief Resilience Scale. The main objective of the study was to investigate the relationship between Tridoshas (the three bodily humors), Trigunas (qualities), mental health, and resilience in a sample of 90 participants. Data analysis revealed significant correlations between these variables, It is found that Mental Health and resilience is significantly and positively correlated with Sattva and Kapha, while certain doshas were associated with lower resilience and poorer mental well-being. These findings support the Vedic understanding of the interconnectedness of mind-body types and psychological well-being. The study suggests that

individualized approaches based on Vedic principles may offer valuable insights into mental health interventions and resilience-building strategies. The study thus supports the potential therapeutic applications of integrating Vedic personality frameworks in modern psychological practices.

Regular Session 6:

RS6: Emerging Technologies in Neuroscience and Mental Health Time: 8:45-10:45, Hall D **Session Chair:** Saumya Subramanian		
Paper ID	**Paper Titles**	**Authors**
247	Bactericidal Potential of Traditional Herbal fire ceremony: A microbiological evaluation	Saumya Subramanian, Vinod Mony and Sumathi Jayaraman
245	Mind and Neurolinguistic Programming (NLP) in Controlling Obesity and Weight Management	Rajeev Gupta, Pawan Gupta and Rajeev Gupta
237	Consciousness: an emergent property of the brain or a fundamental property of the missing evolved atom?	Manoranjan Manoranjan and Lalit Saraswat
220	The Unfinished Race: Bridging the Gap Between AI Vision Models and Human Motion Perception	Sania Verma and Hardik Chadda
223	Advancements in brain scanning techniques for Alzheimer's Disease: A Systematic Literature Review	Hitakshi Gupta, Ridhima Chauhan, Milloni Bhuva and Dr. Heenakshi Bhansali
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[247] Bactericidal Potential of Traditional Herbal fire ceremony: A microbiological evaluation

Saumya Subramanian (Sri Sri Institute for Advanced Research, Bangalore, Karnataka, India), Vinod Mony (Sri Sri Institute for Advanced Research, Bangalore, Karnataka, India) and Sumathi Jayaraman (Sri Sri Institute for Advanced Research, Art of Living).

Abstract

Purpose of the research This study explores the potential of traditional fire ceremonies (yagnas) as a natural fumigation process with antimicrobial properties. While yagnas have been integral to Indian culture for centuries, their broader environmental and health im-pacts, especially in open spaces, remain understudied.
Study design Environmental air samples were collected from the site where the yagnas were performed using the passive air sampling, settle plate technique. After the microbial characterization, bacterial isolates from the air were identified through 16S rRNA gene amplicon sequencing. Additionally, the volatile organic compound (VOC)

composition of the air at the yagna site was analyzed using gas chroma-tography. To further assess the potential health benefits, the antibacterial activity of the ash residue from the yagnas was evaluated against clinically relevant path-ogens.

Principal results The fire ceremonies led to a significant reduction in airborne microbial load, with approximately 71.8% fewer colony-forming units (CFUs) observed after the yagnas compared to before. Gas chromatography-mass spectrometry (GC-MS) analysis of the yagna fumes identified several volatile organic compounds (VOCs), with acetoxy-megestrol-acetate-methoxime (52.14%), nonanal (11.9%), decanal (9.2%), octanal (5.6%), and heptanal (3.46%) being the most prevalent. The yagna ash demonstrated notable antibacterial activity against Escherichia coli, Staphylococcus aureus, and Pseudomonas aeruginosa, with significant reduc-tions in optical density observed over time, indicating a strong inhibition of bacte-rial growth.
Major conclusions: Findings suggest that yagna fumes and ash can reduce airborne microbial load, promoting environmental hygiene and offering significant public health benefits. Further research could expand their applications in environmental and clinical settings.

[245] Mind and Neurolinguistic Programming (NLP) in Controlling Obesity and Weight Management

Rajeev Gupta (Chairman Advisory Board, International Organisation of Integrated Health Practitioners), Pawan Gupta (Speciality Doctor, Psychiatry, NHS) and Rajeev Gupta (Professor Institute of Medicine, University of Bolton).

Abstract

The prevalence of obesity is rising across the globe. Obesity and weight management have traditionally focused on restrictive diets and pharmacological interventions to suppress appetite. However, these methods often lead to long-term metabolic adaptations that counteract weight loss efforts. Mind-based approaches, including mindfulness and neurolinguistic programming (NLP), offer a sustainable alternative by targeting the cognitive and behavioural mechanisms underlying eating habits. Mind-body medicine is in fact an integrative approach to health that emphasizes the interactions between mental, emotional, and physical processes. Emerging evidence suggests that techniques such as meditation, yoga, biofeedback, and cognitive behavioural therapy (CBT) can significantly impact various physiological systems, including the immune, endocrine, and nervous systems. This article explores the role of NLP and mindfulness in weight control, analysing their efficacy compared to conventional appetite suppression techniques, with a deeper dive into their neurophysiological mechanisms and impact on brain function.

[237] Consciousness: an emergent property of the brain or a fundamental property of the missing evolved atom?

Manoranjan Manoranjan (IIT Kanpur) and Lalit Saraswat (IIT Kanpur).

Abstract

Consciousness, a perplexing scientific mystery acknowledged since ancient times in both Eastern and Western cultures, continues to elude modern science. We are all familiar with the subjective experience of consciousness but where does it originate? What creates consciousness? The prevailing assumption in modern neuroscience is that every aspect of consciousness emerges entirely from neural interactions within the brain. This materialistic worldview that consciousness is an emergent property of the brain is inadequate in explaining the subjective experience of consciousness. We lack a solid explanation for the reason and process behind this phenomenon. If consciousness is more than the complex neural interactions, we need to explore new ways of thinking. This study endeavours to address the enigma of consciousness—its origin—by integrating insights from Madhyasth Darshana (MD) to bridge the gap in our current understanding of reality. Lastly, the author concludes that MD‟s view on Consciousness that it is a fundamental property of a constitutionally complete evolved atom which is yet to be discovered experimentally is more promising as it solves the conundrum “what is or what creates consciousness” and also explains some of the mysterious phenomena of consciousness.

[220] The Unfinished Race: Bridging the Gap Between AI Vision Models and Human Motion Perception

Sania Verma (Dayalbagh Educational Institute(D.E.I), Agra, India) and Hardik Chadda (Dayalbagh Educational Institute(D.E.I), Agra, India).

Abstract

Despite rapid advances in computer vision, AI systems are inherently constrained in their capacity to interpret dynamic visual scenes —a domain where human vision excels. Human vision can easily deal with occlusions, motion blur, and fast object displacements due to the brain's highly integrated processing of motion, shape, and spatial context. State-of-the-art vision models, however, falter when presented with stimuli in which motion contains essential perceptual information.To investigate this gap, we used kinematograms — visual stimuli that decouple motion from shape — as a controlled gold standard for dynamic perception. Conventional motion estimation techniques such as Farneback and Horn-Schunck optical flow could not derive meaningful spatiotemporal information. Even new methods such as RAFT showed only partial efficacy. This highlights that current AI vision pipelines lack the biological synergy between motion and object recognition.In response, we designed a two-stage cognitive pipeline inspired by human vision. In the first stage, dense optical flow detected regions with the highest motion, which were translated into enriched RGB motion representations. In the second stage, advanced video classification models (ResNet18, Video Swin Transformers, MotionLLM) processed these enriched frames. However, these models achieved only 0–5% accuracy when applied directly.To improve performance, we proposed a biologically inspired filter — selecting frames containing the strongest motion content — and classified these using YOLOv8, repurposing object detection as dynamic video classification. This hybrid approach achieved 47.22% accuracy across 36 kine matogram videos, a significant improvement over baseline methods.This work uncovers that AI vision models, even in their current form, are still fundamentally disconnected from the way human perception dynamically integrates motion, shape, and spatial reasoning into a unified perceptual experience.This bridge between machine vision and biological perception has the potential to unlock transformative advances in robotics and cognitive augmentation technologies.

[223] Advancements in brain scanning techniques for Alzheimer's Disease: A Systematic Literature Review

Hitakshi Gupta (Dr. Vishwanath Karad MIT WORLD PEACE UNIVERSITY), Ridhima Chauhan (Dr. Vishwanath Karad MIT World Peace University, Pune), Milloni Bhuva (Dr. Vishwanath Karad MIT World Peace University, Pune) and Dr. Heenakshi Bhansali (Dr. Vishwanath Karad MIT World Peace University, Pune).

Abstract

Alzheimer's disease (AD) is a chronic neurodegenerative disease that is accountable for the decline in cognitive function and structural brain changes. Neuroimaging has become an important means of early diagnosis, monitoring disease progression, and treatment assessment. The latest advancements in magnetic resonance imaging (MRI), positron emission tomography (PET), functional MRI (fMRI), diffusion tensor imaging (DTI), and artificial intelligence (AI)-based imaging have been summarized in this systematic literature review, which was conducted based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) template. With the help of rigid inclusion and exclusion criteria and a systematic search method, the PRISMA method ensures methodological transparency. Peer-reviewed journal articles and clinical trials on early detection, disease progression, and treatment responses in Alzheimer's were included, and non-English studies, literary texts, books, and studies unrelated to Alzheimer's imaging were excluded. After screening, 12 studies that met the eligibility criteria were analyzed. Evidence suggests that multimodal neuroimaging improves the identification of Alzheimer's biomarkers, such as tau pathology, amyloid deposition, and cerebral atrophy, whereas AI-based imaging methods enhance diagnostic performance and disease discrimination. However, challenges, such as high expense, issues with standardization, and limitations on accessibility, still remain and impact clinical application. The research emphasizes the increasing importance of AI and combined neuroimaging technologies in Alzheimer's diagnosis. To enhance diagnosis accuracy and treatment efficacy, future studies need to aim at lowering imaging costs, enhancing biomarker-based imaging, and enhancing AI model validation to enhance diagnosis accuracy and treatment efficacy.

The development of these technologies will result in improved outcomes for Alzheimer's disease and indorse early therapy.

[189] Remote Photoplethysmography: Techniques, Limitations, and Future Directions

Navdha Bhardwaj (IIT Mandi), Deepshik Sharma (Jain University, Bangalore) and Arnav Bhavsar (IIT mandi).

Abstract

Remote photoplethysmography (rPPG) produces biometric data examining minute variations in facial skin colour, including heart and breathing rates, enabling non-contact physiological monitoring. In forensic investigation, emotional analysis, and medical applications, this approach has great promise. Notwithstanding significant progress in signal processing and machine learning, problems including ambient noise, motion distortions, and skin tone bias still prevent general acceptance. The evolution of rPPG techniques is investigated in this review, together with present constraints and future directions to improve its ethical application, inclusiveness, and accuracy. Important areas needing work include the development of strong algorithms, a variety of data, and multimodal data integration. Dealing with these issues will make rPPG a revolutionary tool for telemedicine and enhance emotional and behavioural analysis, among other important disciplines.

[182] Impact of Emotion on the Analytical Ability of the Human Brain – An EEG Study

Silpa S (National Institute of Technology Raipur), Shashikanta Tarai (National Institute of Technology Raipur) and Arindam Bit (National Institute of Technology Raipur).

Abstract

The relationship between facial emotion processing and arithmetic processing in the brain is complex. To understand the effect of facial emotion on the arithmetic ability of the human brain, brain activity of participants was measured while they performed arithmetic tasks (addition/subtraction) with a background of happy, sad or angry facial expression using a 16-channel electroencephalography (EEG) system. Reaction time and reaction accuracy were measured. Preliminary findings revealed that, among the 12 stimuli used, the fastest response time was observed in Angry-Addition-Incorrect condition (1059.61 ms). Reaction accuracy was highest for Angry-Addition-Correct condition (97.25%), whereas Happy-Subtraction-Correct condition had the lowest accuracy (87.72%). ERP analysis revealed significant differences in brain activity in the prefrontal, frontal, central and parietal regions in the gamma frequency during the tasks. These results indicate that emotionally charged stimuli may affect arithmetic performance in the brain and exemplify the importance of emotional context during the performance of cognitive/mathematical tasks.

[206] Add on effect of Hypnotherapy in Diabetes Distress – A Case Series

Swathy Soman G (MD scholar, Ayurveda (BAMS)) and Jithesh M (Doctor).

Abstract

Diabetes Distress (DD) is a negative psychological reaction that arises from the lifestyle modifications required to manage Diabetes Mellitus (DM), including diet restrictions, medication adherence, and blood sugar monitoring. This distress can significantly impact an individual's Quality of Life (QoL), affecting physical, psychological, sexual, and social well-being. Furthermore, DD has been observed to have a positive association with glycemic levels of individuals. Traditional interventions for DD often involve psychiatric medication, which can have limited outcomes and adverse effects. The case series include 3 cases of DD which was managed with Hypnotherapy in conjunction with Ayurvedic medications for DM. The outcomes were assessed through investigations such as FBS, PPBS and also with scales such as Diabetes Distress Screening scale (DDS-17), Pittsburgh Sleep Quality Index (PSQI) and Diabetes 39 (D-39) scale. Hypnotherapy was observed to be beneficial in reducing the distress in patients which

resulted in reduction of blood glucose levels as well. The add on approach highlights the benefits of addressing the psychological aspects of diabetes management and thereby improving the overall outcome.

Special Session 6:

SS6: Transcendental Phenomenology and Human Science Inquiry: Integrating First-Person Perspectives		
June 5, 11:15-13:15 Session Chair: Dr. Richa Chopra, IIT Kharagpur Venue: Hall B		
Speaker	**Affiliation**	**Topic**
Dr. Shekhar P. Seṣādri	Former Dean & Director, NIMHANS	Human Science Inquiry: Common Methodologies
Dr. Hareram Pandey	Dept. of Yoga, IGNTU, Amarkantak	Human Science Inquiry: Yoga-Vedānta Vichar
Swami Vidyāpradananda	RKMVERI, Belur, Dept. of Sports Science and Yoga	Realms and Truths of Anubhūti: One's Lived Experience
Acārya Śrivats Goswami	Gaudīya Vaiṣṇava Leader; Former Visiting Scholar, Harvard Divinity School	Realms and Truths of Anubhūti: One's Lived Experience
Dr. Nilanjana Moitra	Assistant Professor, NIEPA	A Policy Framework for Institutionalizing First-Person Research in the HEI Arena
Dr. Richa Chopra	Centre of Excellence for IKS, IIT Kharagpur	Revelations of Sādhaks across Sampradāyas, Audience Participation, and Closing Remarks

Regular Session 7:

RS7: Cognitive Biomarkers and Neurotechnologies Time: 11.00-13.00, Hall C Session Chair: Dr. Ramajayam Govindaraji		
Paper ID	**Paper titles**	**Authors**
125	Attention-based Metric Learning Framework for Seizure Detection in EEG Recordings	Hrishikesh Tiwary and Arnav Bhavsar
20	Local Percept-Perceiver Phenomenon for the Study of Consciousness in Cognitive Neuroscience and Its Vedantic Extension	Shri Lal Raghudev Ram Singh and Sohom Chakrabarty
115	Design of an EMG and EEG-based Bionic Hand using Haptic Sensation and Thermal Feedback	Susmita Das, Sparsho Chakraborty, Sayantan Maitra, Md Avaish Siddiqui, Mohammad Alamgir and Rahul Raj
110	The Neurobiology of Intuition: Examining Subconscious Decision-Making in Indian Spiritual Pratices	Khushi Joshi and Priyaranjan Maral

108	Kurtosis of One Dimensional Local Binary Pattern of Electroencephalogram – A Schizophrenia Biomarker	Simi V.R., Justin Joseph, Vipin Venugopal and Rashmi K.M.
52	Evaluation of Distributed Text Representations for Document Classification: A Comparative Study of Word2Vec, Doc2Vec, and Phrase Regression	Akash Kota Raju
54	Load Testing Strimzi for Kafka on Kubernetes	Akash Kota Raju

[125] Attention-based Metric Learning Framework for Seizure Detection in EEG Recordings

Hrishikesh Tiwary (Indian Institute of Technology Mandi (IIT Mandi), Mandi, India) and Arnav Bhavsar (Indian Institute of Technology Mandi (IIT Mandi), Mandi, India).

Abstract

Electroencephalography (EEG) is a non-invasive technique used in investigating brain functions, diagnosing neurological conditions, and exploring cognitive processes. One of the major applications of EEG is in the diagnosis of epilepsy, which accounts for a significant proportion of the world's neurological disease burden. Identifying seizure is crucial for epilepsy diagnosis. The classification of seizure and non-seizure events using EEG recordings is an important task in clinical practice in epilepsy diagnosis. Traditionally, the identification is often manual, which can be time-consuming and less effective for complex EEG. In this study, we present a deep learning framework that integrates attention mechanisms with metric learning for seizure detection. Specifically, we utilize a metric learning approach enhanced with attention to extract optimized features from the frequency domain representations of EEG recordings. These features are then used by a classifier to distinguish between seizure and non-seizure events. The obtained results demonstrate that the proposed model has performed well in classifying data from previously unseen subjects.

[20] Local Percept-Perceiver Phenomenon for the Study of Consciousness in Cognitive Neuroscience and Its Vedantic Extension

Shri Lal Raghudev Ram Singh (University of Waterloo) and Sohom Chakrabarty (Indian Institute of Technology Roorkee).

Abstract

This article introduces a novel framework of local percept-perceiver phenomenon (LPPP) to bridge the gap between the understanding of consciousness in cognitive neuroscience and Advaita Vedanta. For this purpose, models for visual consciousness in cognitive neuroscience and the philosophical model of consciousness in Advaita Vedanta are presented using the LPPP framework. Through these models, a hierarchical paradigm is revealed in cognitive neuroscience, and a Vedantic extension is proposed. Finally, with the help of the LPPP framework and these models, an attempt is made to address the existing challenges to understanding consciousness in cognitive neuroscience.

[115] Design of an EMG and EEG-based Bionic Hand using Haptic Sensation and Thermal Feedback

Susmita Das (Narula Institute of Technology), Sparsho Chakraborty (Narula Institute of Technology), Sayantan Maitra (Narula Institute of Technology), Md Avaish Siddiqui (Narula Institute of Technology), Mohammad Alamgir (Narula Institute of Technology) and Rahul Raj (Narula Institute of Technology).

Abstract

The bionic arm was developed to assist individuals who have lost an upper limb, addressing the need for an affordable yet functional prosthetic. Inspired by patients with upper limb dysfunction, the arm utilizes myoelectric

signal control, which transmits the user's conscious muscle contractions to enable synergistic movements. Unlike expensive commercial products, this project combines EMG-based input with advanced features such as haptic feedback and temperature sensation. The haptic system, consisting of a force sensor at the virtual fingertip, a micro-vibration motor, and a force trigger, emulates the tactile experience of a real finger. Additionally, temperature sensation is provided by an analog sensor paired with a Peltier device and H-bridge circuitry, allowing the user to feel a range of thermal cues. Functionality was verified by sending a series of event codes via a microcontroller and visually monitoring the arm's movements. Furthermore, the acquired EMG signal was successfully rectified, amplified, and filtered to meet the motor threshold for precise control. Overall, the developed myoelectric bionic arm shows great potential in enhancing the quality of life for patients with upper limb dysfunction.

[110] The Neurobiology of Intuition: Examining Subconscious Decision-Making in Indian Spiritual Pratices

Khushi Joshi (National Forensic Sciences University) and Priyaranjan Maral (National Forensic Sciences University).

Abstract

Intuition is often viewed as a subconscious cognitive process that significantly influences decision-making and problem-solving. Indian spiritual traditions, including practices like meditation, yoga, and mantra chanting, have long emphasized the cultivation of intuition as a pathway to accessing deeper knowledge. Recent advancements in neuroscience have illuminated the neural mechanisms that underlie intuitive cognition, highlighting the roles of critical brain regions such as the prefrontal cortex, insular cortex, anterior cingulate cortex, and basal ganglia. This systematic review examines the connections between intuition, neurobiology, and Indian spiritual practices, synthesizing findings from neuroimaging, electrophysiology, and behavioral studies. The review underscores how spiritual practices can enhance intuitive decision-making by modulating neural circuits and fostering heightened awareness. Understanding the neurobiological foundations of intuition may provide valuable insights for cognitive neuroscience, psychology, and contemplative sciences, paving the way for future research and practical.

[108] Kurtosis of One Dimensional Local Binary Pattern of Electroencephalogram – A Schizophrenia Biomarker

Simi V.R. (Manipal Institute of Technology Bengaluru), Justin Joseph (Indian Institute of Science), Vipin Venugopal (Amrita Vishwa Vidyapeetham, Coimbatore) and Rashmi K.M. (Manipal Institute of Technology Bengaluru).

Abstract

Despite the wide applications of the one-dimensional local binary pattern (1D-LBP) of the human electroencephalogram (EEG) for the automated di-agnosis of epilepsy, Alzheimer's disease, central neuropathic pain etc., its scope as a biomarker to detect schizophrenia is not known. To fill this knowledge gap, here we evaluate the potential of the kurtosis of the 1D-LBP to detect schizophrenia. From the rank-sum test, the kurtosis of the 1D-LBP shows significant differences between the schizophrenia patients and healthy subjects at F7 ($0.0203 < 0.05$), Fz ($0.0409 < 0.05$), and Cz ($0.0108 < 0.05$) electrodes. At all these three electrodes, accuracy (78.5714%) is appreciably high. It is meritorious that a single feature at one electrode can detect schiz-ophrenia with good accuracy with the help of a simple threshold classifier.

[52] Evaluation of Distributed Text Representations for Document Classification: A Comparative Study of Word2Vec, Doc2Vec, and Phrase Regression

Akash Kota Raju (New York University).

Abstract

This paper presents a comprehensive comparison of various text representation methods, including Word2Vec, Doc2Vec, Phrase Regression, and Multinomial Inverse Regres- sion (MNIR), applied to the task of classifying Yelp reviews based on their star ratings. We explore several approaches, including Word2Vec inversion and aggregation, Doc2Vec with distributed memory (DM) and distributed bag-of-words (DBOW) specifications, and phrase-based logistic regression. Through an evaluation of out-of-sample misclassification rates, we find that simple phrase regression consistently performs well across most tasks, though Word2Vec inversion yields more accurate and interpretable document rankings in terms of fitted probabilities. The analysis highlights the trade-offs between discriminative and generative classifiers and suggests that while phrase regression is optimized for performance, distributed representations like Word2Vec and Doc2Vec could benefit from further optimization, particularly for large-scale unlabeled corpora. This work underscores the value of Word2Vec inversion as an interpretable and scalable alternative for text classification tasks, while also noting areas where more sophisticated document representation methods may improve with enhanced tuning and model refinement.

[54] Load Testing Strimzi for Kafka on Kubernetes

Akash Kota Raju (New York University).

Abstract

This paper presents a custom load testing system for Strimzi, which deploys Apache Kafka on Kubernetes. We discuss the limitations of existing solutions and justify the need for a bespoke system using Quarkus and React. The system simulates high user loads and monitors performance, validating Strimzi's stability over extended periods. Our tests demonstrate the system's efficiency in handling real-time data processing, with future enhancements proposed for greater parameterization and external storage integration. This work, done in collaboration with Red Hat Czech, s.r.o., provides key insights into effective load testing for cloud-native applications.

Regular Session 8:

RS8: Perception, Consciousness, and Neuro-Cognitive Biomarkers Time: 11.15-13.15, Hall D Session Chair: Dr. Pushpendra Singh		
Paper ID	**Paper Titles**	**Authors**
57	An Advanced Approach For Image Captioning Using Artificial Intelligence: A Novel Approach	Upasana Kumari, Shipra Krishna, Mohd Areeb, Kshatrapal Singh, Vijay Shukla And Dhiraj Gupta
26	Stabilization Of Nature From Consciousness	R Muraleedhara Kurup
35	Auditory Perception-Action Coupling Is Sensitive To Tone Frequency At The Peri-Second Range: Evidence From The Subjective Translation Index	Sanjram Premjit Khanganba, Yogesh Kumar Shivhare, Anantha Ubaradka And Manish S
36	Musopathy Pronal Tonation Increases SpO2: Pilot And Simulation Studies	Uma Ranjan And Ravikiran Narasimhan
42	Effect Of Mirror Therapy On Cognitive And Motor Deficits In Stroke	Divya Pandey, Kamal Arya And Shanta Pandian
119	Neural Correlates Of Meditation: An MEG Study With Phenomenological Insights	Damisetti Geeta Prem Chandoo, C M Markan, Sona Ahuja And Manjari Tripathi
19	Uncovering Potential Leads From Bacopa Monnieri: An Ayurveda-Inspired Systems Biology Approach To Target Differentially Expressed Genes In Alzheimer's Disease	Mayank Roy Chowdhury And Sudarshana Deepa Vijaykumar

159	Perception Of Reality And Illusion – An Information-Based Theoretic Model	Anil Patnaik And Devesh Sharma

[57] An Advanced Approach for Image Captioning using Artificial intelligence: A Novel Approach

Upasana Kumari (Greater Noida Institute of Technology), Shipra Krishna (Greater Noida Institute of Technology), Mohd Areeb (Greater Noida Institute of Technology), Kshatrapal Singh (Greater Noida Institute of Technology), Vijay Shukla (Greater Noida Institute of Technology) and Dhiraj Gupta (Greater Noida Institute of Technology).

Abstract

Auto captioning for images is the technique of creating written summaries or captions for images that are relevant to their subject matter. It is a machine learning that blends computer vision (image interpretation) and natural language processing (text production). Automatic image captioning is a relatively new and rapidly increasing academic topic. This machine learning role combines natural language processing (text generation) with computer vision (picture interpretation). Although more care is still necessary to attain outcomes comparable to human performance. This work seeks to determine in a systematic manner what distinct and contemporary methodologies and deep neural network models are being utilized for envision captioning. Which techniques are applied to these models? and which tactics have a higher chance of yielding positive results. We conducted a comprehensive literature analysis on current research from utilizing popular databases (Scopus, Web of Sciences, and IEEEXplore). In relation to the goal of this study, we found 61 main studies. We found that language generation is accomplished through RNN or LSTM, whereas CNN is used to analyze visual information and recognize objects in an image. The most often used datasets are flicker 8k, flicker 30k, and MS COCO (used in every session). All study uses the most widely used assessment matrix, BLEU. Additionally it is demonstrated that LSTM with CNN performed better than RNN with CNN. We determined that the concentration mechanism and encoder decoder are the two most promising approaches to implementing this framework, and that combining it can be advantageous. For academics interested in contributing to auto image captioning, this paper offers guidelines and recommendations.

[26] STABILIZATION OF NATURE FROM CONSCIOUSNESS

R Muraleedhara Kurup (BODHAKASAM ASRAMAM).

Abstract

Consciousness is the knowledge that is inherent for everything and is omnipres-ent as a witness. The ingenuity of consciousness arises as pulsation (of prana). The probability of pulsation become infinity (Avyaktha) and pervades. The tran-sition of pulsation change as probability of energy due to stabilization. Similarly, transition of pulsation of energy become force, force become wave, and wave be-come field at the respective critical limit interaction. Since the unification of this system up to field, that become qualities of matter such as the sound–the touch-ness–the form–the taste- the odour respectively. These qualities are fertilized form of matter. The interaction of this system orderly stabilized as constituent factors of matter such as energy, force, wave, field, subatomic particles, atomic particles, atoms, molecules and states of matter at the respective critical limit of interaction. The unification of system is become state of matter such as aether, air, agni, liquid and solid respectively. Finally the enclosing of states of matter turn to matter at the critical limit of interaction with required space-time extent. The effect of enclosing of 'states of matter' make transition in qualities and change to biological, chemical and physical properties of matter at the respective critical limit of interaction. Therewith, the splendor of everywhere fulfilled con-sciousness turn to matter and universe, hence consciousness-matter system come in effect. Also the clean form of pulsation serves as sensory sensation. Finally, as the unification and interaction of composite factors of matter become probability of nature.

[35] Auditory Perception-Action Coupling is Sensitive to Tone Frequency at the Peri-Second Range: Evidence from the Subjective Translation Index

Sanjram Premjit Khanganba (Indian Institute of Technology Indore), Yogesh Kumar Shivhare (Indian Institute of Technology Indore), Anantha Ubaradka (Indian Institute of Technology Indore) and Manish S (Indian Institute of

Technology Indore).

Abstract

The current study investigates how auditory information from Inter-Stimulus Intervals (ISIs) is converted into motor actions during Inter-Tap Intervals (ITIs), focusing on the effect of tone frequency on perception-action coupling within peri-second (short ISI of 1000 ms) and supra-second (long ISI of 2000 ms) ranges. Introducing the Subjective Translation Index (STI = ITI/ISI) as a novel metric, this study quantifies the real-time conversion of ISI into ITI, addressing both over-translation and under-translation scenarios. Thirty healthy adults (Mage = 24.6 years; SD = 4.9) participated voluntarily in the study and were instructed to synchronize with two distinct isochronous sound sequences across both ISI ranges. The results demonstrate that tone frequency significantly influences the STI, highlighting a cross-over interaction between tone frequency and ISI. The study also reveals a more pronounced perception-action coupling in the peri-second range, suggesting a sensory-automatic process significantly influenced by tone frequency, evidenced by differential translation behaviors with low and high-frequency tones.

[36] Musopathy Pronal Tonation Increases SPO2: Pilot and Simulation Studies

Uma Ranjan (Sri Ramachandra Institute of Higher Education and Research) and Ravikiran Narasimhan (Melharmony Foundation).

Abstract

COVID-19 saw several complaints of breathing difficulty and a drop in SPO2 levels. The intervention was mainly in the form of ex- ternal oxygen supply. Lowered oxygen saturation for long periods can be dangerous and can cause multi organ failure, leading to permanent or- gan impairment or even death. Although pranayama has been known to improve lung functioning, their effect of SPO2 improvement is unknown. In this work, we investigate the results of Musopathy Pronal Tonation, and demonstrate its efficacy in improving SPO2 by as much as 10% in a short time span of 15-20 minutes. We also present a simulation study of the phonation over and above normal breathing.

[42] Effect of Mirror Therapy on Cognitive and Motor deficits in Stroke

Divya Pandey (Project Technical Support-III (OT), PDUNIPPD), Kamal Arya (Lecturer, MOT, Phd, PDUNIPPD) and Shanta Pandian (Lecturer, MOT (Occupational Therapy), PDUNIPPD).

Abstract

Background: Stroke is a leading cause of long-term disability, often resulting in cognitive and motor impairments that reduce quality of life. Mirror therapy, a neurorehabilitation technique utilizing mind-brain-body, has shown some favourable results in motor recovery but its effects on cognitive functions remain underexplored. Objective: This study investigates the impact of mirror therapy on cognitive and motor deficits among post-stroke individuals. Methods: A single-group pre-post experimental study was conducted with 24 hemiparetic stroke patients. All the subjects received mirror therapy-based activities by the sound side. The intervention adjustment allowed illusion of the paretic limb. Cognitive function was assessed using the Montreal Cognitive Assessment (MoCA), and motor function was evaluated using the Fugl-Meyer Assessment (FMA). Participants received mirror therapy 5 days a week for 30 minutes over three months. Results: Post intervention, significant improvements were observed in MoCA scores (15.96 ± 6.20 to 19.92 ± 5.09, $p < 0.001$) and FMA scores (55.42 ± 26.51 to 72.42 ± 21.35, $p < 0.001$). Conclusion: Mirror therapy effectively improves both cognitive and motor functions, supporting the role of mind, brain, and body integration in the stroke rehabilitation programs. Future research should explore its long-term effects and mechanisms of cognitive and motor recoveries.

Keywords: Cognitive recovery, Illusion, Motor control, Neuroplasticity, Rehabilitation

[119] Neural Correlates of Meditation: An MEG Study with Phenomenological Insights

Damisetti Geeta Prem Chandoo (Dayalbagh Educational Institution), C M Markan (Dayalbagh Educational Institution), Sona Ahuja (Dayalbagh Educational Institution) and Manjari Tripathi (All India Institute of Medical Sciences).

Abstract

Meditation, an ancient practice of inner awakening, presents challenges in defining and interpreting its neural correlates. This study integrates phenomenological insights with neuroimaging to identify frequency-specific neural correlates of Surat-Shabda-Yoga meditation. Using MEG, we recorded 10-minute meditation sessions from Advanced Meditators (AM), Beginner Meditators (BM), and Control Meditators (CM) or base line group. Experiential self-reports based on meditational depth questionnaire (MEDEQ) documented progressive meditational states. The data were segmented into one-minute epochs and band-pass filtered across δ, θ, α, β, and γ frequency bands for temporal and spectral comparisons. Spectral analysis of meditators (AM & BM) revealed a shift towards higher frequencies (β & γ) during meditation, with stronger effects in AM. Source localization via standardized Low-Resolution brain Electromagnetic Tomography (sLORETA) identified dominant frequency-specific regions, forming consistent band-specific clusters across meditator (AM & BM) groups compared to CM group. These clusters followed an anatomical hierarchy: (θ, α) in frontal/anterior regions, and (β, γ) in parietal/posterior regions. Overall, our findings suggest that Surat-Shabda-Yoga meditation is characterized by a frequency shift and anatomically organized band-specific clusters. The present study opens future avenues to explore the potential link between meditation-induced neural activity and enhanced cognitive functions.

[19] Uncovering Potential Leads from Bacopa monnieri: An Ayurveda-Inspired Systems Biology Approach to Target Differentially Expressed Genes in Alzheimer's Disease

Mayank Roy Chowdhury (Department of Biotechnology, National Institute of Technology, Andhra Pradesh-534101, India) and Sudarshana Deepa Vijaykumar (Department of Biotechnology, National Institute of Technology, Andhra Pradesh-534101, India).

Abstract

This study investigates the therapeutic potential of bioactive compounds derived from Bacopa monnieri (BM), commonly known as Brahmi in Ayurveda and Indian traditional medicine, for addressing Alzheimer's disease (AD). Employing an integrative systems biology approach, the study incorporates virtual screening, hub-bottleneck gene analysis, pathway enrichment, molecular docking, and dynamic simulations. Key bioactive compounds, including Diosbulbin B, Dihydroresveratrol, Emodin, and Quercetin, were identified based on their favorable ADME profiles. Hub-bottleneck gene mapping revealed critical proteins such as ESR1, MAPK1, PIK3CA, and AKT1, while KEGG pathway enrichment emphasized the importance of the Estrogen Signaling and PI3K-Akt Signaling pathways in AD pathogenesis. Molecular docking and dynamic simulations confirmed stable interactions between these bioactives and target proteins, with specific residues indicating potential sites for therapeutic refinement. Rooted in the principles of Ayurveda, these findings highlight Bacopa monnieri as a promising multi-targeted therapeutic candidate, paving the way for innovative strategies in AD treatment.

[159] Perception of Reality and Illusion – An Information-Based Theoretic Model

Anil Patnaik (Quest Research Center, Faridabad, India) and Devesh Sharma (Government Institute of Medical Sciences, Greater Noida, Uttar Pradesh, India).

Abstract

When it comes to perception, the contentious query much debated in science and philosophy is: how well do our subjective perceptions represent objective reality? Some say we perceive an aspect of reality being shaped by our senses, while others say we perceive none of it. For both reality and illusion, a proper understanding or definition is necessary to delve into this topic of perception justifiably. Even the most basic definition available is not consistently carried into the mainstream neuro and cognitive science paradigms. Some authors label perceptions as illusions or hallucinations because they are constructed brain experiences. This paper argues that defining reality or illusion is

only possible through the same perception under scrutiny. So, it is better to explore its reliability and the conditions thereof. We propose an information-based theoretic model to show that the cognitive faculty is reliable enough and that the evolutionary setup has kept it worthy across all species based on cellular-level fundamental core principles that can be insightful when studied based on information. We posit that information processing at the cognitive level is fundamentally representational due to the representational principle guiding the learning and behavior of the organism. Consequently, the organism naturally looks for information that matches the subjective and objective domains that define perceptual reality. When encountering an illusion, the same faculty can detect it as a mismatch, favoring the organism. Failing to detect is not a defect but a conditional limitation overcome by individual or collective efforts.

Thursday, June 5, 2025

Dasami, Jyastha, Shukla Paksha, Vikram Samvat 2082

Afternoon Session

Schedule	Talks	Session Chair	Venue
14:00-14:45	Keynote Talk 1 **Dr. B N Gangadhar**	Prof. Laxmidhar Behera	Auditorium
14:45-15:30	Keynote Talk 2 **Dr. Gautam Desiraju**	Prof. Ganpati Ramanath	Auditorium
15:30-16:00	Invited Talk 1 **Prof. GS Murthy**	Dr. Venkatesh Chembrolu	Auditorium
16:00-16:30	Invited Talk 2 **Prof. Supratim Ray**	Prof. Sandeep Kumar	Auditorium
16:30-17:30	Panel Discussion 1: **IKS Shaping the Science of Cognitive Matter**	Prof. Laxmidhar Behera	Auditorium
17:30-19:00	Poster session (32)/High Tea		Foyer
	Special Session 7: **Electromagnetic Resonance of Biomaterials: New Insights into Brain Functions**	Dr. Pushpendra Singh	Hall A
19:00-20:00	Cultural		Auditorium

Panel Discussion 1

Title: IKS Shaping the Science of Cognitive Matter

Moderator: Prof. Laxmidhar Behera, Director IIT Mandi

Date: Jun 5, 2025

Timing: 16:30-17:30

Venue: Auditorium

Panelists:

1. **Prof. Shrinivasa Varakhedi**, VC Central Sanskrit University
2. **Dr. B. N. Gangadhar**, Chairman, National Medical Commission Emeritus, Professor and Former Director, NIMHANS. Padma Shree Recipient
3. **Prof. G. S. Murthy**, IIT Indore and IKS National Coordinator
4. **Dr. Amit Sethi**, Associate Professor, Department of Occupational & Recreational Therapies, Department of Physical & Athletic Training, Department of Biomedical Engineering University of Utah
5. **Dr. Anirban Bandyopadhyay**, NIMS Japan
6. **Mr Hide Saegusa**, Japan, Prof of Practice, IIT Mandi

Description:

The integration of the Indian Knowledge System (IKS) into the development of a science of cognitive matter (MIND) presents both a promising vision and significant challenges. One of the core difficulties lies in reconciling the introspective, experiential nature of IKS with the empirical, objective approach of modern science. Concepts such as manas, buddhi, chitta, and ātman do not have direct parallels in contemporary neuroscience, making conceptual translation complex. Furthermore, while IKS emphasizes inner realization and scriptural authority, modern science demands measurable, replicable data. Academic skepticism toward traditional knowledge systems and a lack of shared terminology further hinder cross-disciplinary collaboration. Practical obstacles such as limited institutional support, funding constraints, and the need to maintain the authenticity of IKS while innovating in its application also remain. Despite these challenges, IKS holds valuable insights that can enrich and possibly redefine the scientific understanding of consciousness, provided integrative frameworks are carefully and respectfully developed. Panel members will deliberate on these issues providing deeper insights to the budding researchers who are attending MBCC 2025

Poster Presentation 1:

5th June 17:30-19:00 (Foyer)		
Paper ID	**Autrhors**	**Poster Title**
4	Ayush Srivastava	Are We Morally Responsible For Our Dreams? : An Indian Perspective
6	Shivendra Singh	Bhartrihari on the question: Is Language Thought

12	Nihala Abdul Samed, Swathisha P, Rakesh Sengupta	Generational Perspectives on Parenting: A Comparative Study of Young and Middle-Aged Adults
13	Nirbhay Trigun and Dr. Anjuli Jain	Theatrical Techniques in Leadership Training
14	Monica Prabhakar	‘Self: Between Consciousness and Being’: Understanding the Bhagavadgītā Perspective
17	Soniya Soniya and Rakesh Pandey	Mind and Consciousness through the Shiv Sankalp Sukta of Yajurveda
25	Sukanya Singh	Transforming Intelligence Perceptions: Growth Mindset Pedagogy in Focus
32	Malavika K Pradeep	Therianthropy in "Kummatty": Shapeshifting and Narrative Identity in the film
43	Hari Narayanan V	Blindspot, Transparency and Cosmopsychism
44	Garima Bhatnagar, Seema Kashyap and Prem Saran Tirumalai	The Effect of Sattvic Diet on Mood and Meditation Practices
46	Shivani Badonia and Dr. Rajni Nautiyal	A Narrative Review on a Sound-Based Meditation Practice – Mind Sound Resonance Technique
47	Aditi Mishra and Ashutosh Pandey	Ancient Philosophy Meets Modern Psychology: Bhagavadgītā’s Guidance and Psychological Interventions for Mental Health
53	Akash Kota Raju	Beat the Machine: A Gamified Approach to Identifying Systematic Errors in Predictive Models
58	Sneha Baidnath Pandit, Sangharsh Kumar, Rahul Verma, Kshatrapal Singh, Vijay Shukla	A Novel Approach for Age and Gender Prediction from Webcam Using OpenCV
60	Shaktija Mishra, Praerna Chowdhary, Deepshik Sharma, Ramajayam Govindaraji	Development and Validation of Yoga-Based Inner Power Wellness Scale
62	Dr. Richa Chopra and Haripriya Vasudevan	A Yoga-Vedānta Theoretical Framework of Consciousness & Cognition
63	Neha Sadhvi Polepaka and Rakesh Sengupta	Modulation of Recurrent Inhibition in Saliency-Based Enumeration Model: Sensory Integration Perspective
69	Shreya Dwivedi	Sexism that Has Little to Do with Feminism in Male and Female Young Adults
76	Dr. Kinjal Bhatia	Exploring the Samkhya Paradigm in Kalidasa's Abhijnanshakuntalam: A Philosophical Analysis
118	Neetu M, Arun Sasidharan, and Anandh Dhanushkodi	Microstate Dynamics during Sleep in Schizophrenia
132	Pinky Arya	Emotional Autobiographical Memory and Autonoetic Consciousness: A Qualitative and Phenomenological Study
137	Pooja Sharma and Giriraj Sharma	The Science of Consciousness in Ayurveda: A Satva-Centric Perspective on Mind-Body Integration

145	Angad Pratap Singh and Rohan Rawat	Attachment in All its Forms: A Cross-Cultural Comparison of the Causal Factors and Interventions Pertaining to Attachment in Western and Eastern Cultural Contexts
154	Mukul Gupta	Reversal of Severe Physiological Diseases by Meditation and Belief-Brain-Body Connection: A Hypothesis
156	Vishnu Sai Naik Banoth	Phenomenal Self-Models and the Illusion of Consciousness: Rethinking Transparency, Language, and the Narrative Self
163	Vinod Jiani, Ankan Biswas, Srishty Aggarwal, Kanishka Sharma, Supratim Ray	Long-term Practice of Open-Eyed Meditation Leads to Suppression in EEG Functional Connectivity at High Frequencies
173	Pinjarla Gowri Kusuma	How Knowledgeable Are Gen Z about Indian Knowledge Systems (IKS)?
184	Sadavrat Amlani, Umesh Chikkanna, Hemant Bhargav, Kishore Kumar Ramakrishna	Integrated Ayurveda and Yoga Treatment (IAYT) as an Add-On to Standard Care in Treatment-Resistant Schizophrenia – Case Report
235	Yadukrishna T.U and Vinod R	Ayurvedic Management of Alcohol-Induced Psychotic Disorder – A Case Report
241	Raj Harsora, Smita Jain and Shefali Upadhyay	Bridging Cognitive and Energy-Based Healing: An Integrated Approach Using REBT and Yoga Prana Vidya
250	Athira P S	A Multidimensional Approach to Tardive Dyskinesia: Integrating Ayurveda, Yoga, and Modern Therapeutics for Holistic Management
29	Deepavalli Arumuganainar and Arunvel Thangamani	Bio-information Field Approach to Associative Learning in Paramecium caudatum
30	Arunvel Thangamani and Deepavalli Arumuganainar	ORCH-OR in Self-Quantising Compressive Space Paradigm - A Theoretical Treatise

Special Session 7:

SS7: Electromagnetic Resonance of Biomaterials: New Insights into Brain Functions
June 5, 17:30-19:00 **Venue: Hall A**
Session Chair: Dr. Pushpendra Singh

Authors	Title	Paper
Astha Kumari and Sachin Yadav	Multiuser asymmetric medical data encryption-cum-authentication algorithm based on polar decomposition in fractional Fourier domain	172
Mukul Saxena, Dr. Ram Singh Kushwaha, Rishabh Giri, Aditya Kumar, Utkarsh Pratap Singh, Swati Singh, Pushpendra Singh and Anirban Bandyopadhyay	AI enabled EEG Analysis for detection of Neurodegenerative Disorders	174
Pushpendra Singh, Teena Singh, Mukul Saxena and Anirban Bandyopadhyay	Nano-Sensory Probe for Enhanced Detection of Weak Brain Signals: A Theoretical Perspective	56
Mr Hide Saegusa	Indian Knowledge System and The Science of Awakening	Invited Talk
Michael Levin	Diverse Intelligence: detecting, creating, and communicating with unconventional minds	Invited Talk

[172] Multiuser asymmetric medical data encryption-cum-authentication algorithm based on polar decomposition in fractional Fourier domain

Astha Kumari (Department of Mathematics, BMU, Rohtak) and Sachin Yadav (Department of Mathematics, IIHS, KUK).

Abstract

This manuscript proposes a multiuser asymmetric encryption-cum-authentication algorithm based on polar decomposition in the fractional Fourier domain. The proposed algorithm uses fractional Fourier transformation while polar decomposition enables multi user characteristics. The proposed security algorithm overcomes vulnerabilities associated with conventional digital and optical cryptographic algorithms. The performance of the proposed algorithm is evaluated using statistical parameters such as correlation coefficient, mean squared error, information entropy, mesh, and histogram plots. Robustness of the proposed algorithm is also tested against various cryptographic attacks, including known-plaintext, chosen-plaintext, and brute-force attacks. Moreover, the results validate that proposed algorithm is secure and robust to use in real-time applications.

[174] AI enabled EEG Analysis for detection of Neurodegenerative Disorders

Mukul Saxena (Department of Biotechnology, Institute of Engineering and Technology, Bundelkhand University, Jhansi UP 284128, India), Dr. Ram Singh Kushwaha (Department of Electronics and Instrumentation Engineering,I.E.T., Bundelkhand University, Jhansi UP 284128, India), Rishabh Giri (DEPARTMENT OF BIOTECHNOLOGY, INSTITUTE OF ENGINEERING AND TECHNOLOGY BUNDELKHAND UNIVERSITY JHANSI UP 284128, INDIA), Aditya Kumar (DEPARTMENT OF BIOTECHNOLOGY, INSTITUTE OF ENGINEERING AND TECHNOLOGY BUNDELKHAND UNIVERSITY JHANSI UP 284128, INDIA), Utkarsh Pratap Singh (DEPARTMENT OF BIOTECHNOLOGY, INSTITUTE OF ENGINEERING AND TECHNOLOGY BUNDELKHAND UNIVERSITY JHANSI UP 284128, INDIA), Swati Singh (DEPARTMENT OF BIOTECHNOLOGY, INSTITUTE OF ENGINEERING AND TECHNOLOGY BUNDELKHAND UNIVERSITY JHANSI UP 284128, INDIA), Pushpendra Singh (Sapiotectronics lab, IKSMHA Centre, Indian Institute of Technology Mandi, Kamand, Mandi 175075, India) and Anirban Bandyopadhyay (International Center for Materials Nanoarchitectronics (MANA), NIMS, 1-2-1 Sengen, Tsuku-ba, Ibaraki-3050047, Japan).

Abstract

Alzheimer's disease, Parkinson's, epilepsy and multiple sclerosis are some of the neurological disorders associated with a diverse range of conditions that affect the central and peripheral nervous systems. These neurodegenerative disorders lead to progressive decline in cognitive, behavioral and motor functions in humans. Early diagnosis of these diseases still remains a challenge despite the cutting-edge medical sciences of modern times. However, early diagnosis is crucial in managing the disease effectively and slowing thedisease from progressing. Recent advances in artificial intelligence (AI) have unlocked new opportunities to detect early neural alterations in these diseases based on various types of data recorded using different methods like MRI, EEG, MEG and more. Among these Electroencephalography (EEG) promises a non-invasive and comparatively cheap method for detecting subtle brain activity changes that can help identify early onset of certain disorders. The AI modelwas developed using carefully processed EEG data with the main objective being to improve diagnostic in such diseases. The EEG data was sourced from anon line repository containing a collection of medical records.The signals associated with specific diseases were isolated using appropriate preprocessing methodsto remove artifacts caused by eye blinks, muscle movements, and environmental noise. TheMo del was trained using features extracted from both the time and frequency domainsto detect distinctive patterns in the delta, theta, alpha, beta, and gamma bands. These extracted features form the basis of the computational biomarkers for the neural dis orders. By integrating various machine learning architectures, enables the AI model to capture both the space and time related features of EEG signals, ultimately enhancing its ability to differentiate between the variations linked with the neural disord ers. Future research will work to further refine these techniques and expand the dataset to improve the model.

[56] Nano-Sensory Probe for Enhanced Detection of Weak Brain Signals: A Theoretical Perspective

Pushpendra Singh (Sapiotectronics lab, IKSMHA Centre, Indian Institute of Technology Mandi, Kamand, Mandi 175075, India), Teena Singh (Sapiotectronics lab, IKSMHA Centre, Indian Institute of Technology Mandi, Kamand, Mandi 175075, India), Mukul Saxena (IET, Bundelkhand University, Jhansi Uttar Pradesh, India) and Anirban Bandyopadhyay (International Center for Materials Nanoarchitectronics (MANA), NIMS, 1-2-1 Sengen, Tsukuba, Ibaraki-3050047, Japan).

Abstract

This research introduces a probe design that significantly enhances the capture of weak brain signals using a combination of silver (Ag) nanoparticles and a 12-element Yagi antenna array. The Ag nanoparticles are tailored to resonate across a broad frequency spectrum, from KHz to THz, allowing for multi-channel signal amplification within a single probe. These nanoparticles, embedded in a structured dielectric gel, serve to increase signal precision and strength by enhancing electromagnetic interactions at different frequency ranges, which are then captured and analyzed through logic analyzers. Unlike existing brain signal capture technologies, which often lack the sensitivity to detect subtle brain wave patterns, our design maximizes signal gain and reduces noise, allowing for more accurate readings of brain signals. This probe holds promising applications in neuroscience research, brain-computer interfaces (BCIs), and diagnostic tools for neuro-logical disorders, providing a robust solution for real-time, high-precision brain signal monitoring across a wide frequency range.

Friday, June 6, 2025

Ekadasi, Jyastha, Shukla Paksha, Vikram Samvat 2082

Morning Session

Time	Event	Session Chair	Venue
9:00-9:45	Keynote Talk 3	Prof. Chayan Nandi	Auditorium

	Prof. Nirmalya Chakraborty		
9:45-10:30	Keynote Talk 4 **Prof. Shrinivasa Varakhedi**	Prof. Ganpati Ramanath	Auditorium
10:30-11:00	Invited Talk 3 **Mrs. Shefali Vaidya**	Prof. Varun Dutt	Auditorium
11.15-11:45	Invited Talk 4 **Dr. Narendra Arya**	Dr. Subhajit Roy Chaudhury	Auditorium
11.45-12:45	Panel Discussion 2: **Nurturing Civilizational Consciousness for Transformation**	Prof. Ganpati Ramanath	Auditorium

Panel Discussion 2

Title: Nurturing Civilizational Consciousness for Transformation

Moderator: Prof. Ganpati Ramanath, John Tod Horton Professor of Materials Science and Engineering, Rensselaer Polytechnic Institute, USA; WISE Guest Professor, Wallenberg Initiative on Materials Science for Sustainability, Uppsala University, Sweden; Adjunct Professor, Indian Knowledge Systems for Mental Health Applications (IKSMHA), IIT Mandi, India.

Date: Jun 6, 2025

Timing: 11:45-12:45

Venue: Auditorium

Panelists:

1. **Prof. Gautam Radhakrishna Desiraju**, Professor Emeritus Solid State and Structural Chemistry Unit Indian Institute of Science, Bangalore
2. **Prof. Nirmalya Narayan Chakraborty**, Vice Chancellor, Presidency University
3. **Shri Ajay Chaturvedi**, Founder HarVa and KFN, IIM Rohtak
4. **Smt. Shefali Vaidya**, Author, Fellow-Ananta Leadership Program, Convenor-Indic Academy.
5. **Acārya Šrivats Goswami**, Gaudīya Vaiṣnava Leader and Formerly Visiting Scholar, Harvard Divinity School's Centre for the Study of World Religion
6. **Prof Ankush Mittal,** VC, COER University, Roorkee

Description:

Bhārata is perhaps the only ancient civilization that has kept its core philosophies, culture and traditions alive through centuries of invasions, loot and subjugation, thanks to the collective resilience and commitment of our ancestors. Despite this, India's actions towards reclaiming its rightful place across various facets of life (e.g., wellbeing, science, arts, policies, innovation, economy, global influence, leadership) is now deterred by internal forces rather than external ones. A leading downer is a mix of deep

apathy, ignorance, and arrogance of its intelligentsia which frequently takes hostile positions that are unhelpful to India's growth and transformation. This panel will address important facets of where we are, how we got here, and the way forward for preparing the next generation of young minds to realize India's civilizational aspirations and potential. **Swāmī Vivekānanda's** call of "**Awake, arise, and stop not till the goal is reached**" echoing **Yama's** advice to **Naciketā** in **Kaṭhopaniṣad** appears to be as applicable today, if not more, than it was 125 years ago. The second half of Yama's advice "**The path is hard to tread**" will be discussed to unveil insights and implementable ideas to consciously harness India's talent and potential for individual wellbeing aligned with transformative national growth that fosters world harmony.

Friday, June 6, 2025

Ekadashi, Jyastha, Shukla Paksha, Vikram Samvat 2082

Afternoon Session

Schedule	Talks	Session Chair	Venue
14:00-14:30	Invited Talk 5 **Sri. Ajay Chaturvedi**	Dr. Ramajayam Govindaraji	Auditorium
14:30-17:00	Special Session 8: **Consciousness and LLMs: A Synergistic Approach to Intelligence**	Dr. Rohit Saluja	Hall A
	Special Session 9: **Yoga and Mental Health – Concepts, Experimental Findings & Applications**	Prof. Chayan Nandi & Dr. Ramajayam	Hall B
	Regular Session 9:**Intelligent Systems and Consciousness Studies: From Plants to Human Beings**	Dr Sanjeev Nara	Hall C
	Regular Session 10: **Neurocongitive Therapies and Contemplative Practices**	Prof. Sandeep Kumar	CnP(Hall D)
17:00-18:30	Poster presentation (35)/High Tea		Foyer

Special Session 8

SS8: Consciousness and LLMs: A Synergistic Approach to Intelligence
June 6, 14:30-17:00 Venue: Hall A
Session Chair: Dr. Rohit Saluja, IIT Mandi

Authors	Title	Paper ID
Radhika Grover, Manikandan Ravikiran, Tarun Sharma and Rohit Saluja	Can LLMs Guess Like Humans? Evaluating Inferential Reasoning Under Ambiguity	252
Vriti Sharma, Rajat Verma, Manikandan Ravikiran and Rohit Saluja	EAGER: An Exploratory Analysis of LLMs in GuEssing bilingual woRd translation	253
Gyan Singh, Vibhu Gupta and Rohit Saluja	CLEAR - Comparing LLM and Empirical Approaches to Reworking Proverbs	254
Rajat Verma, Nandan Paralikar, Manikandan Ravikiran, Rohit Saluja and Ganesh Ramakrishnan	Assessing Metacognitive Ability of LLMs using a Language-unaware Sandhi-splitting Paradigm	255
Tarun Sharma, Ankit Maurya and Rohit Saluja	Can Large Language Models Truly Understand Human Language Learning Challenges?	256
Shikhar Dubey, Praveen Tiwari, Manikandan Ravikiran and Rohit Saluja	FOCUS - Facilitating low-resolution OCR Confirmation with Unsupervised Systems	259
Radhika Grover, Manikandan Ravikiran, Tarun Sharma and Rohit Saluja	Can LLMs Guess Like Humans? Evaluating Inferential Reasoning Under Ambiguity	252

[252] Can LLMs Guess Like Humans? Evaluating Inferential Reasoning Under Ambiguity

Radhika Grover (IIT Mandi), Manikandan Ravikiran (IIT Mandi), Tarun Sharma (IIT Mandi) and Rohit Saluja (IIT Mandi).

Abstract

Recent advancements in Large Language Models (LLMs) have showcased impressive performance across factual and commonsense reasoning benchmarks. However, their capacity to perform inference under ambiguity and minimal context remains underexplored. We introduce a novel dataset of 50 general-purpose questions designed to evaluate single-hop inferential reasoning in settings where surface retrieval fails and contextual deduction is required. In a zero-shot, single-turn evaluation, ChatGPT-4 achieved only 20.8% accuracy, substantially below human performance. While the model's responses were syntactically fluent, they frequently lacked introspective depth and situational awareness. In contrast, human answers reflected emotional grounding, personal insight, and commitment to a singular, contextually plausible interpretation. Our findings expose critical limitations in current LLMs' ability to simulate human-like reasoning and underscore the need for architectures that incorporate reflective and uncertainty-aware mechanisms

[253] EAGER: An Exploratory Analysis of LLMs in GuEssing bilingual word translation

Vriti Sharma (Indian Institute of Technology, Mandi), Rajat Verma (Indian Institute of Technology, Mandi), Manikandan Ravikiran (Indian Institute of Technology, Mandi) and Rohit Saluja (Indian Institute of Technology, Mandi).

Abstract

Large Language Models (LLMs) are artificial intelligence systems that are designed to understand and generate human language. They are used widely for various tasks such as text generation, trans- lation, summarization, writing code, improving communication, and au- tomation. LLMs trained in one language enhance natural language pro-

cessing tasks in that language but lack the ability to guess, unlike hu- mans, who can guess the meaning or synonyms. In this paper, we propose a dataset of 160 Hindi-Sanskrit word pairs and perform their analysis on multiple LLMs, unaware of the Sanskrit language and 160 Sanskrit words on multiple LLMs unaware of the Hindi language. The dataset and analysis will demonstrate LLMs' limited capacity for metacognition, i.e., cognitive speculation and inference in language translation tasks. To validate our hypothesis, we inferred multiple LLMs on our dataset and observed that they have 50.40% less accuracy compared to humans in guessing the meaning of the Hindi word in the Sanskrit language and 53.28% less compared to humans in guessing the meaning of the Sanskrit word in the Hindi language.

[254] CLEAR - Comparing LLM and Empirical Approaches to Reworking Proverbs

Gyan Singh (Thapar Institute of Engineering & Technology), Vibhu Gupta (IIT Mandi) and Rohit Saluja (IIT Mandi).

Abstract

This study compares the linguistic creativity of humans and a Large Language Model (LLM) by examining their ability to modify common proverbs with single-word substitutions. A total of fifty modified proverbs are generated by substituting a single word, by both LLM and human, to enhance impact while preserving original meanings. Two experts evaluate each modified proverb on the basis of understandability and creativity. Results show that in approximately 72% of the instances, human made modifications are given preference by the experts over the modifications made by LLMs. Qualitative analysis indicates that the replacements made by LLMs exhibit lesser semantic understanding while innovating. These findings suggest that while the LLM under study possesses remarkable language capabilities, its outputs remain limited compared to human creativity.

[255] Assessing Metacognitive Ability of LLMs using a Language-unaware Sandhi-splitting Paradigm

Rajat Verma (Indian Institute Of Technology, Mandi), Nandan Paralikar (Indian Institute Of Technology, Bombay), Manikandan Ravikiran (Indian Institute Of Technology, Mandi), Rohit Saluja (Indian Institute Of Technology, Mandi) and Ganesh Ramakrishnan (Indian Institute Of Technology, Bombay).

Abstract

Large Language Models (LLMs) have demonstrated strong capabilities in NLP tasks through extensive pretraining. However, this paper highlights their limited ability to perform language unaware sandhi- splitting (splitting the conjoined words as per grammar rules) in San- skrit—a task requiring metacognitive reasoning. We introduce a dataset of hundred Sanskrit words with their splits and evaluate Sanskrit-unaware LLMs and human annotators on this task. To make it a metacognitive task, with each sample we provide two reference examples closest to the sample (yet challenging since at least one of the splits in each reference is different from the sample's split), which are helpful in making the cor- rect guess. Our findings reveal a significant gap in humans' and LLMs' performance, with a Word Error Rate (WER) difference of up to 85.45%, indicating the absence of metacognitive skills in current LLMs.

[256] Can Large Language Models Truly Understand Human Language Learning Challenges?

Tarun Sharma (iit mandi), Ankit Maurya (iitmandi) and Rohit Saluja (iit mandi).

Abstract

Language learning is a complex process influenced by cognitive, emotional, and cultural factors. This study compares human and Large Language Model (LLM) responses for a survey on language learning challenges. Language model is prompted to list out top 50 challenges while learning a new language. Similarly multiple human candidates were asked to provide a list of challenges. Our analysis found only 24\% similarity between human and LLM-generated responses, highlighting the AI's limitations in addressing real human struggles. Although LLMs

effectively identify general linguistic difficulties, they fail to capture the key concerns of human learners and unique challenges. These findings suggest that LLMs produce commendable responses with utmost grammatical precision yet distant from human authenticity. We also examine the responses from different sources using different AI models. We train the models specifically trained for classifying two classes: huamn's concern and llm's concern. To ensure eradicating any biases occurring due to writing style or grammar errors, we paraphrase human responses via LLM. In our experiments, the AI models efficiently distinguish between LLM's generated responses and human generated responses, with precision and recall values ranging from 86\% to 92\%, indicating the exclusiveness of two classes.

[259] FOCUS - Facilitating low-resolution OCR Confirmation with Unsupervised Systems

Shikhar Dubey (IIT Mandi), Praveen Tiwari (IIT Mandi), Manikandan Ravikiran (IIT Mandi) and Rohit Saluja (IIT Mandi).

Abstract

Optical Character Recognition (OCR) is the process of converting document images into text. Verification of OCR text (or confirmation) for low-resolution inputs remains challenging due to semantic and structural confusion between the input image and text predictions. The absence of labels in unsupervised settings further increases the complexity. We propose an unsupervised technique as a baseline for the verification of a hundred low-resolution images and their predictions from Tesseract OCR. To be precise, we first synthesize the images of OCR predictions using a fixed font and style. Next, we feed the low-resolution (real) input images and the corresponding (predictions') synthetic images to ResNet50 to extract word-level features. We finally compare the obtained features for verification using cosine similarity. To benchmark, we also present the results of Vision Language Models (VLMs) like ChatGPT, Claude, and Gemini by prompting them to compare low-resolution images to the predictions' synthetic images. We also present an ensembling approach and compare it with human evaluation. The work contributes to a broader understanding of low-resolution OCR in scenarios with a scarcity of human annotators.

Special Session 9:

SS9: Yoga and Mental Health – Concepts, Experimental Findings & Applications		
June 6, 14:30-17:00 Venue: Hall B		
Session Chair: Dr. Ramajayam Govindaraj/Prof. Chayan Nandi		
Dr. (Prof.) Ashok Kumar Mukhopadhyay	Member, Advisory Board of Galileo Commission, Scientific and Medical Network, UK	Invited Talk
Amrutha Ramamurthy Kondi and Ramajayam Govindaraj	Nādānusandhāna: A Conceptual Overview and Review of Experimental Studies	183
Ramajayam Govindaraj, Praerna Chowdhury, Archana Khatreja, Shekhar Sinha, Amrutha Kondi and Shaktija Mishra	Effect of Raja yoga-based distance healing on hospital based clinical outcomes among paediatric inpatients – A pilot study	192
Annie Kachchap, Dr Prabhat Upadhyay and Dr Anjana Dwivedi	Study of Short-term effect of Hakini Mudra on Cardiac Coherence, HRV indices and EEG spectral bands	217
Dharma Thobhani and Ramajayam Govindaraj	Nasal Cycle: A Spiritual and Scientific review	234

[183] Nādānusandhāna: A Conceptual Overview and Review of Experimental Studies

Amrutha Ramamurthy Kondi (IIT Mandi) and Ramajayam Govindaraj (IIT Mandi).

Abstract

This paper explores the Yogic concept of Nādānusandhāna, the practice of contemplating the 'Sound'. We examine descriptions of this concept in classical texts, primarily the Haṭhayogapradīpikā of Svāmī Svātmarāma (15th century), and also the contemporary therapeutic practices, known by the same term - nādānusandhāna. Through a review of various classical and modern interpretations, we provide a descriptive summary to serve as a basis for further investigation of this practice. The paper also reviews some experimental studies on nādānusandhāna.

[192] Effect of Raja yoga-based distance healing on hospital based clinical outcomes among paediatric inpatients – A pilot study

Ramajayam Govindaraj (IIT Mandi), Praerna Chowdhury (NIMHANS), Archana Khatreja (JIMS Hisar), Shekhar Sinha (JIMS Hisar), Amrutha Kondi (IIT Mandi) and Shaktija Mishra (IIT Mandi).

Abstract

This study investigates the impact of Rajayoga Distant Healing (RDH) on hospital stay duration and caregiver anxiety. A randomized controlled trial was conducted, where caregiver anxiety levels and hospital stay duration for paediatric patients were measured across two groups. Statistical analysis using an unpaired t-test revealed no significant difference in hospital stay duration between the RDH and control groups ($p = 0.982$). However, repeated measures ANOVA (RM-ANOVA) indicated a significant reduction in caregiver anxiety in the RDH group over time compared to the control group ($F(1,27) = 13.030$, $p = 0.001$). These findings suggest that while RDH may not directly shorten hospitalization duration, it could serve as an effective intervention for reducing caregiver distress. Future research with larger sample sizes and extended study durations is recommended to further assess the potential benefits of RDH in patient care and emotional well-being.

[217] Study of Short-term effect of Hakini Mudra on Cardiac Coherence, HRV indices and EEG spectral bands

Annie Kachchap (Birla Institute of Technology, Mesra, Ranchi), Dr Prabhat Upadhyay (Birla Institute of Technology, Mesra, Ranchi) and Dr Anjana Dwivedi (Birla Institute of Technology, Mesra, Ranchi).

Abstract

This study is an attempt to analyze the short-term effects of Hakini Mudra on Electroencephalogram, Herat Rate Variability and Cardiac coherence. This hand gesture practice, rooted in ancient yogic practices, is known for its profound impact on mental clarity, memory and attention. We aim to uncover its potential benefits on mental health and heart rate variability. Our methodology involved 21 subjects divided into an experimental group and a control group, the former engaged in the intervention while the latter remained inactive. Assessments using Lead II ECG and 8 channel electrode placements for EEG were performed before and after the intervention, providing information on changes in HRV parameters in the time and frequency domain as well as spectral band power. Data analysis was performed using Kubios and MAT LAB, revealing significant increase in parasympathetic activity and lowering of band power in all channels and all bands except C4 channel. Post intervention, improvement by 5.20% was noticed

in SOC-29 (Sense of Coherence) score in experimental group. Tasks performed by the experimental group showed increment by 44%, 28.21% and 19.53% in focus, attention, and memory respectively, post intervention whereas task performed by control group showed 13.33%, 25% and 4.30% increase in focus, attention and memory respectively. There were some changes in SDNN (p=0.005), RMSSD (p=0.003) and pNN50 (p=0.06), wherein HF (p=0.5), LF (p=0.1), Total Power (p=0.01) post intervention in experimental group. The increment of coherence (p=0.05) post intervention reveals significant improvement in the overall (physiological, psychological and mental) state of an experimental group. As the psychological improvement was seen in the experimental group when compared to control group, the STAI score post intervention which states decrease in anxiety score by 2.5-3% in STAI-S and STAI-T of STAI (State Trait Anxiety Index). Hence there was a relaxed state with alertness post intervention.

[234] Nasal Cycle: A Spiritual and Scientific review

Dharma Thobhani (Indian Institute of Technology, IKSMHA, Mandi, Himachal Pradesh) and Ramajayam Govindaraj (Indian Institute of Technology, IKSMHA, Mandi, Himachal Pradesh).

Abstract

This paper explores the spiritual and scientific aspect of Nasal Cy-cle. The nasal cycle is the spontaneous swelling and shrinking of the nasal passages. Where swelling of one side is accompanied by a reciprocal shrink-ing of the contralateral side. The term ‘Nasal Cycle’ was first given by Kay-ser in 1895. While sages in ancient texts had presented it in the name of ‘Swara Yoga’ many years ago. Integrating scientific research with traditional knowledge can help us to enhance physical, mental and spiritual well-being. This review paper concluded that nasal cycle can be used as a therapeutic tool for the holistic well-being which includes respiratory health, cognitive performance and enhancement of autonomic nervous system and it also has immense potential for gaining spiritual experiences.

[99] Yogic Consciousness and Mental Health: A conceptual Framework from Patanjali Yoga Sutras

Ramajayam Govindaraj (Indian Institute of Technology, IKSMHA, Mandi, Himachal Pradesh), Praerna Chowdhury (National Institute of Mental Health & Neurosciences, Bengaluru, Karnataka), Sheetal Bharti (Indian Institute of Technology, IKSMHA, Mandi, Himachal Pradesh), Arun Sasidharan (National Institute of Mental Health and Neuro Sciences (NIMHANS)), Ravindra Nagendra (SSMC NIMHANS) and Bindu Kutty (NIMHANS).

Abstract

Consciousness remains one of the biggest mysteries in science, with no universally accepted explanation of how subjective experiences arise from physical processes. Modern science and yogic philosophy both seek to understand consciousness, but Patanjali Yoga Sutras(PYS) provides a unique perspective by defining consciousness as purusha—a sentient, non-physical entity that interacts with matter (prakruti) through the mental apparatus (chitta).This paper explores the relationship between yogic consciousness and mental health through the framework of the Patanjali Yoga Sutras (PYS).This study presents a three-tier model of the consciousness-matter complex, providing deeper insights into the foundations of positive psychological well-being and the origin of mental health dysfunction. The discussion explores various yo-ga-based tools and techniques that help regulate the impulsive reactions of the mental apparatus (chitta) and foster psychological well-being. Further-more, a structured yoga-based model is introduced, offering an objective and practical approach to mental health. This framework serves as a guide for integrating yoga-based counseling techniques alongside existing therapeutic practices, enhancing holistic mental well-being.

[101] Mind wandering is qualitatively different in meditators: an experience sampling method-based study

Shaktija Mishra (IIT Mandi), Praerna Chowdhury (NIMHANS Banglore), Ramajayam Govindaraj (IIT Mandi), Deepshik Sharma (Jain University Banglore), Sourabh Suman (IIT Mandi), Arun Sasidharan (NIMHANS Banglore), Ravindra Pn (NIMHANS Banglore) and Bindu M Kutty (NIMHANS Banglore).

Abstract

Mind wandering (MW), a ubiquitous cognitive phenomenon, involves spontaneous and involuntary internal experiences that often divert attention from primary tasks. This study examines MW patterns among meditators and non-meditators within the Indian context using an experience-sampling method with 35 participants and 441 data points collected over three days. We found a significant association between status of mind wandering (MW) and group-med itators vs non-meditators ($\chi^2 = 21.4625$, $p < 0.0001$). Further analysis confirmed that both MW ($\chi^2 = 4.05$, $p < 0.044$) and No-MW ($\chi^2 = 8.3795$, $p < 0.0038$) were significantly more frequent in meditators. However, the type of MW (episodic vs. non-episodic) was similar across groups ($\chi^2 = 2.4582$, $p = 0.1169$). Notably, when focusing on episodic MW, non-meditators reported significantly more negative emotional instances (sad) compared to meditators ($p < 0.0456$). Furthermore, meditators were significantly more engaged in internal thoughts prior to MW episodes compared to non-meditators ($\chi^2 = 21.4625$, $p < 0.0001$). Mixed-model logistic regression analysis revealed that higher task engagement predicted reduced MW, regardless of meditation status. Specifically, greater interest ($\beta = -0.627$, $\chi^2 = 9.30$, $p = 0.002$), proficiency ($\beta = -0.690$, $\chi^2 = 9.16$, $p = 0.002$), and concentration ($\beta = -1.09$, $\chi^2 = 21.8$, $p < 0.001$) were associated with reduced MW. These findings highlight meditation's role in fostering adaptive MW patterns, promoting emotional resilience, and enhanced internal stability.

Regular Session 9:

RS9: Intelligent Systems and Consciousness Studies: From Plants to Human Beings **Time: 14:30-17:00, Hall C** **Session Chair: Dr Sanjeev Nara**		
Paper ID	**Paper Titles**	**Authors**
55	Enhancing Energyplus Simulation Capabilities Through Extended API Integration	Akash Kota Raju
64	Ai-Powered Strategies To Mitigate Cognitive Dissonance: Enhancing Emotional Well-Being And Critical Thinking On Social Media	Kshipra Moghe And Saniya Atalatti
65	Semantic Modelling And Knowledge Representation In Early Childhood Parenting: A State-Of-The-Art Review	Leena Dutta, Abhishek Ray And Prachet Bhuyan
66	Exploring Plant Consciousness: A Fusion Of Indian Knowledge System And Scientific Discovery	Shilpa Chandra, Bodhidipra Mukherjee, Abdul Salam, Chayan Kanti Nandi And Laxmidhar Behera
74	Can AI And IoT-Integrated Mobile Health Apps Effectively Improve Cognitive Health And Caregiver Support For Dementia?	Jessica Kaluiji, Shivani Chauhan, Arvind Sharma And Savita Wadhawan
77	Development Of Entity-Relationships (Er) Guided Green Information System Articulations For Modelling Total Environment Psychology Ecosystem – Managing Human Cognitive Health	Shastri Nimmagadda, Eric Brymer And Ali Reza Alaei
100	AI Tongue Diagnosis: Expert System With Llms For Abdominal Disease Detection Through Mobile App	Gaurav Kumar, Khushi Kumari, Neel Mani, Azad Singh, Rishabh Mandal, Santoshi Sahu And Dhruv Kumar
121	Eye-Metrices In Rorschach Inkblot Test	Vaishnavi Donikar And Rajlakshmi Guha

[55] Enhancing EnergyPlus Simulation Capabilities through Extended API Integration

Akash Kota Raju (New York University).

Abstract

This paper discusses the development and integration of advanced Application Programming Interfaces (APIs) into EnergyPlus, a widely used building energy simulation software. The APIs, including functional, runtime, and data exchange cat- egories, enable enhanced interaction with EnergyPlus simulations through external scripting and real-time data exchange. These enhancements broaden EnergyPlus' utility by facilitating complex control strategies, dynamic data integration, and interoperability with external tools and frameworks, thus advancing its capabilities in building energy performance analysis and simulation.

[64] AI-Powered Strategies to Mitigate Cognitive Dissonance: Enhancing Emotional Well-Being and Critical Thinking on Social Media

Kshipra Moghe (COEP Technological University) and Saniya Atalatti (Savitribai Phule Pune University).

Abstract

As social media becomes integral to students' academic and social lives, cognitive dissonance—the psychological discomfort from con- flicting ideas—poses significant challenges, particularly for engineering students who thrive on structured problem-solving. This mixed-methods study analyzes the experiences of 143 engineering students, revealing that 72% encountered heightened stress due to contradictory online con- tent, with 64% reporting shifts in attitudes under conformity pressures. Qualitative thematic coding identified triggers such as social compari- son, uncertainty, and coping challenges, while highlighting the potential for harmony and resilience through effective strategies. To address these challenges, the study proposes AI-driven interventions replicating psy- chological strategies such as cognitive reframing, emotional regulation, and perspective-taking. Suggested solutions include real-time sentiment analysis, discrepancy detection with reconciliation suggestions, empathy- based counter-arguments, and adaptive learning algorithms for cognitive resilience. These tools aim to reduce cognitive dissonance, foster emotional well-being, and enhance critical thinking, offering actionable in- sights to empower students in navigating social media's complexities.

[65] Semantic Modelling and Knowledge Representation in Early Childhood Parenting: A State-of-the-art Review

Leena Dutta (Department of Computer Science and Engineering, KIIT Deemed to be University, Bhubaneswar, India), Abhishek Ray (Department of Computer Science and Engineering, KIIT Deemed to be University, Bhubaneswar, India) and Prachet Bhuyan (Department of Computer Science and Engineering, KIIT Deemed to be University, Bhubaneswar, India).

Abstract

Parent-Child Interaction Therapy (PCIT) is a therapeutic method designed to strengthen the relationship between parents and their children. The quality of these interactions is often evaluated through observations of free play or structured activities involving parents and young children. Based on these evaluations, therapists provide interventions aimed at fostering healthier parent-child interactions and supporting children's developmental progress. Although such assessments are critical for promoting children's mental health, they can be labour-intensive and require significant resources when conducted manually. This review focuses on three primary areas. First, it explores the relationship between parent-child interbrain synchrony and the development of children's cognitive abilities (e.g., emotion regulation, attention, and learning) and behavioural skills (e.g., cooperation and problem-solving). Second, it investigates the distinct neural mechanisms underlying interbrain synchrony in mother-child and father-child interactions, emphasizing the unique contributions of each parent to a child's development. Finally, it outlines four strategies to enhance interbrain synchrony, including communication practices, nonverbal behaviours, music, and multichannel stimulation techniques. The findings suggest a strong link between parent-child interbrain synchrony and the development of children's cognitive and behavioural skills. This review aims to provide researchers and practitioners with valuable insights into how parenting and the parent-child bond influence children's cognitive and behavioural growth.

[66] Exploring Plant Consciousness: A Fusion of Indian Knowledge System and Scientific Discovery

Shilpa Chandra (PhD Scholar), Bodhidipra Mukherjee (PhD Scholar), Abdul Salam (PhD Scholar), Chayan Kanti Nandi (Professor, IIT Mandi) and Laxmidhar Behera (Director, IIT Mandi).

Abstract

The study of plant consciousness, when viewed through the lens of both ancient wisdom and modern scientific research, provides a holistic understanding of plants as sentient, interconnected beings. Indian philosophy, with its emphasis on Prana (the universal life force) regards plants as conscious participants in the cosmic web of life, deserving of respect and reverence. Modern scientific advancements, particularly in plant neurobiology and electrophysiology, reveal that plants exhibit sophisticated behaviors such as communication, memory, and adaptive responses to environmental changes, suggesting a form of awareness. Traditional views of plants are challenged by this fusion of scientific research and the Indian Knowledge System (IKS), which promotes more moral and sustainable relationships with nature. The study aims to emphasize plants responsibilities as active, adaptable members of their ecosystems that exhibit sensitivity, communication, and memory by combining these two viewpoints. In addition to challenging anthropocentric viewpoints and advancing a holistic concept of life that incorporates plants as essential, sentient elements of the ecosystem, the review seeks to broaden the conventional definition of consciousness.

[74] Can AI and IoT-Integrated Mobile Health Apps Effectively Improve Cognitive Health and Caregiver Support for Dementia?

Jessica Kaluiji (Shoolini University), Shivani Chauhan (Shoolini University), Arvind Sharma (Shoolini University) and Savita Wadhawan (Chitkara University).

Abstract

This study examines the effectiveness of AI-enhanced mobile health (mHealth) applications in addressing cognitive decline and supporting the mental well-being of dementia patients and their caregivers. With the growing prevalence of dementia and its profound effects on memory, thinking, and daily functioning, there is an urgent need for interventions that can mitigate cognitive decline and improve quality of life and support caregivers. Methods: A comprehensive literature review was conducted, synthesizing findings from 104 peer-reviewed studies on AI-enhanced mHealth applications or technologies. The review evaluates these applications and technologies' impacts on cognitive functions such as memory, thinking, language, orientation, and judgment in dementia patients. It also examines design, usability, and privacy considerations critical for elderly users, along with the extent to which caregiver support features are incorporated Results: Findings indicate that while many mHealth applications focus on early detection, monitoring, and predictive analytics, few effectively enhance cognitive functions like memory, language, learning, and judgment, which are particularly vulnerable to dementia. Moreover, there is a gap in caregiver support functionalities, underscoring disconnect in fully addressing the multifaceted needs of dementia care. This study identifies a lack of integrated solutions combining AI, ML, DL, and IoT technologies to comprehensively meet both cognitive and caregiving demands all in one place. Conclusions: The review highlights the potential for an integrated mHealth solution powered by AI and IoT to improve the quality of life and mental health outcomes for both dementia patients and caregivers. A holistic approach could provide continuous cognitive support for patients and real-time assistance for caregivers, addressing accessibility, privacy, and usability concerns while bridging the gap in current solutions. Such advancements could redefine dementia care, supporting a more accessible, effective, and compassionate approach to managing cognitive health.

[77] Development of Entity-Relationships (ER) Guided Green Information System Articulations for Modelling Total Environment Psychology Ecosystem – Managing Human Cognitive Health

Shastri Nimmagadda (DSVV), Eric Brymer (SCU) and Ali Reza Alaei (SCU).

Abstract

Despite extensive environmental management and human psychology research, the interplay between these two fields remains inadequately understood. There is limited knowledge of how human psychology interacts with the environments inhabited by individuals or groups. Additionally, the existing research in environmental psychology may present methodological shortcomings in assessing how behavioural patterns adapt to natural ecological contexts. This study addresses existing gaps in the literature, aiming to bridge emerging research through conceptualization and contextualization. We take into consideration how recent environmental changes may have impacted human behaviour. This research supports Entity-Relationship Modelling to investigate the connections, interactions, and relationships between various environments and the psychological patterns they evoke in nature. Entities and attributes associated with nature are analysed to map and model the Total Environmental Psychology Ecosystem concept to address ecological relationship challenges. A conceptual model has been developed to deepen understanding of these connections and manage the psychological impacts on individuals in response to emerging environmental trends and their characteristics.

[100] AI Tongue Diagnosis: Expert System with LLMs for Abdominal Disease Detection through Mobile App

Gaurav Kumar (Dev Sanskriti Vishwavidyalaya), Khushi Kumari (Dev Sanskriti Vishwavidyalaya), Neel Mani (Dev Sanskriti Vishwavidyalaya), Azad Singh (Dev Sanskriti Vishwavidyalaya), Rishabh Mandal (Dev Sanskriti Vishwavidyalaya), Santoshi Sahu (Dev Sanskriti Vishwavidyalaya) and Dhruv Kumar (UPES).

Abstract

The tongue is a map of the body, reflecting overall health, energy balance, and digestion, with imbalances in color, texture, shape, or coating signaling issues. The integration of AI and machine learning in tongue-based diagnosis is enhancing the efficiency, scalability, and objectivity of health assessments in digital health and integrative medicine. Recent efforts to apply AI-based computer vision techniques to tongue diagnosis using deep learning models and hybrid AI-expert systems show promise, but they often lack personalized health assessment. Current AI models do not typically consider holistic user information like lifestyle and lack systematic decision-making frameworks to interpret findings and offer user-specific health advice. This research bridges the gap in personalized health assessment by proposing a hybrid AI-expert system, called Expert Therapist, that integrates tongue image analysis with a rule-based questionnaire to enhance diagnostic accuracy. The system uses a two-inference engine based on a Large Language Model (LLM) to organize expert knowledge into questionnaires and incorporates holistic therapeutic plans based on Ayurvedic principles, offering an intelligent and patient-centered platform. The proposed system will be enhanced with Yoga Asanas and Basic Acupressure Points techniques to offer comprehensive healing practices, further boosting its ability to maintain user body equilibrium and overall wellness.

[121] Eye-Metrices in Rorschach Inkblot Test

Vaishnavi Donikar (IIT Kgaragpur) and Rajlakshmi Guha (IIT Kharagpur).

Abstract

This study attempted to find a relation between the eye-tracker parameter ‘Fixation Count’ and Rorschach Inkblot Test responses of DQ+, FQu, and M, responses related to creativity and creative expressions in psychology literature and if color cards- VIII, IX, and X show a high number of fixations. The study employed a small sample size of 4, totaling 40 observations for 10 cards (n=4). It was concluded that DQ+, FQU, and M responses do not show a high number of fixations, and color cards do get a higher number of fixations, it was also observed that the first fixation generally appears at the point of the last fixation of the previously seen card.

Regular Session 10:

RS10: Neurocongitive Therapies and Contemplative Practices Time: 14:30-17:00, CnP (Hall D) Session Chair: Prof. Sandeep Kumar, IIT BHU		
Paper ID	**Paper Titles**	**Authors**
122	Synergetic Effect Of Intermittent Fasting And Phytocompounds In Alzheimer's Disease Management– An In-Silico Analysis	Kratika Verma, Trupti Patel, Kaustav Chatterjee, Tiasa Raha And Sounak Basak
127	Transcendental Consciousness: An Inquiry	Vijaya Runchu Choudhary
133	Gut-Brain Axis In Ayurveda: A Neurobiological Perspective On Manasika Roga And Mental Health	Dr.Krishna Rao Sathya, Indu Sabu And Mruthyumjaya Rao Meda
148	Exploring The Effect Of Knowledge On Oculometrics With Increasing Task Complexity	Sonali Aatrai, Sandhya Prabhala Gayatri, Saurabh Sharma And Rajlakshmi Guha
155	The Regulation Of Emotions In Autobiographical Memory As A Function Of Perspective Shifts	Pinky Arya And Frederick L Coolidge
167	Meditation-Based Cognitive Therapy: A Study On Eeg Band Power And Sleep Quality Improvement In University Students With Insomnia	Ankita Garg, Arun Sasidharan, Laxmidhar Behera And Varun Dutt
168	Cognitive Enhancement Through Anodal Tdcs To The Left Dlpfc: An EEG-Based Performance Assessment Study	Ankush Arya, Shrinithi Sriram, Shamak Chouhan Ghantoo, Nitin Rao, Ankit Singh, Varun Dutt And Shubhajit Roy Chowdhury
188	Picto Talkzz: Enhancing Early Childhood Cognitive Skills Using An AR-Based App	Akila Rani M, Tamilselvi D, Kavya K, Deepti B and Kayalvizhi G
190	Exploring Themes In Recent Literature In Areas Of Music Psychology And Music Therapy	Anushree Bodhale And Amruta Punjabi
136	Nature Of Chitta: A Descriptive Study With Special Reference To Rājamārtaṁḍa Vṛtti And Yogavārtika On Yoga Sutra Of Patañjali	Arpit K Dubey And Jyoti

[122] Synergetic effect of intermittent fasting and phytocompounds in Alzheimer's disease management– An in-silico analysis

Kratika Verma (Vellore institute of technology, VIT-Vellore Tamil Nadu), Trupti Patel (Vellore Institute of technology, VIT-Vellore Tamil Nadu), Kaustav Chatterjee (Vellore Institute of Technology, VIT Vellore Tamil Nadu), Tiasa Raha (Vellore Institute of Technology, VIT Vellore Tamil Nadu) and Sounak Basak (Vellore Institute of Technology, VIT Vellore Tamil Nadu).

Abstract

Intermittent fasting, a traditional practice is now causing ripples in the scientific world as we discover its long-term benefits in the management of both lifestyle-related and neurodegen-erative disorders. Here, we aimed to understand the impact of intermittent fasting on Alz-heimer’s disease (AD) addressing new insights about the old questions. The dataset GSE164461 from NCBI-Gene expression omnibus was considered to identify differentially expressed genes (DEGs) in AD mice subjected to 16 weeks of intermittent fasting. The study was structured into two subgroups- female control and AD mice on a standard diet (FWT v/s FAD), female control mice and AD mice under intermittent fasting (FWF v/s FAF). Using the DEseq2 R package, differentially expressed genes were calculated total of 52 DEGs were identified in the FWT vs. FAD comparison (standard diet group), and 53 DEGs in the FWF vs. FAF comparison (intermittent fasting group). The Venn diagram helped us filter out the overlapping

genes in both groups; eight common regulatory genes were further taken into the study. A protein-protein interaction network was studied, out of which APOE, APP and PRNP show the best interaction. Gene ontology and the Kyoto En-cyclopedia of Genes and Genome databases were used to perform functional enrichment and pathway analysis of these key genes. Finally, three plant-based ligands and standard-of-care drugs for AD were simultaneously docked to our target proteins APP, APOE and PRNP The docking results suggested that intermittent fasting combined with phytochemicals thera-peutically modulates gene-related mechanisms in Alzheimer's disease.

[127] Transcendental Consciousness: an Inquiry

Vijaya Runchu Choudhary (IIT Bombay).

Abstract

In recent times, there is a discourse on Higher-order Consciousness in philosophy of mind. Some of the eminent philosophers such as David Armstrong (1981), William Lycan (1996), David Rosenthal (1993), and Peter Carruthers (2000) have argued that higher-order mental states play a crucial role in determining the contents of conscious experience. There are several ways of theorizing Higher-order Consciousness. But to draw a commonality in their theories, it could be said that, a mental state is conscious when corresponding to the higher-order representation; there is a first order mental state which is a conscious state. In this report, I would like to discuss the notion of higher-order consciousness in Edmund Husserl's phenomenology. Husserl advocates a transcendental theory of consciousness. Consciousness is not only about an object of experience but also can transcend the intentional relationship with the object of experience. The intentional nature of experience is that the mental state is conscious of its representational states. Conscious experiences are not only about the experience of phenomena or objects directly, but we also process a reflective awareness of our own acts of consciousness. This reflective awareness is evident in Husserl's use of epoché-bracketing as a means of reaching pure ego. Cogito is a marker of a higher order level of consciousness. In this report, I would like to explain the Husserlian notion of higher order consciousness that explicitly theorizes the Transcendental consciousness.

[133] Gut-Brain Axis in Ayurveda: A Neurobiological Perspective on Manasika Roga and Mental Health

Dr. Krishna Rao Sathya (RESEARCH OFFICER, CENTRAL AYURVEDA RESEARCH INSTITUTE,BHUBANESWAR,CCRAS,Ministry of Ayush,Govt of India), Indu Sabu (RESEARCH OFFICER, CENTRAL AYURVEDA RESEARCH INSTITUTE,BHUBANESWAR,CCRAS,Ministry of Ayush,Govt of India) and Mruthyumjaya Rao Meda (DIRECTOR, CENTRAL AYURVEDA RESEARCH INSTITUTE,BHUBANESWAR,CCRAS,Ministry of Ayush,Govt of India).

Abstract

The gut-brain axis (GBA) represents a bidirectional communication network between the gastrointestinal system and the brain, influencing both physical and mental health. Ayurveda, an ancient Indian medical system, has long recognized this connection through concepts like Agni (digestive fire), Grahani (small intestine), and Manasika Roga (mental disorders). This paper explores the intersection of modern neuroscience and Ayurvedic principles, examining how gut health impacts mental well-being. A comprehensive review of scientific literature from databases such as PubMed, Embase, and Scopus was conducted, alongside an analysis of classical Ayurvedic texts like Charaka Samhita and Sushruta Samhita. Findings highlight the pivotal role of Agni in nutrient metabolism and mental clarity, with disturbances leading to Ama (toxins) accumulation and subsequent mental health issues. Grahani, as the seat of Agni, is linked to both digestion and emotional regulation, with dysfunction exacerbating conditions like anxiety and depression. Modern neurobiology validates these Ayurvedic insights, demonstrating the gut microbiota's influence on neurotransmitter production, stress response, and cognitive function. Dysbiosis, or microbial imbalance, is associated with mental disorders such as anxiety, depression, and cognitive decline. Integrating Ayurvedic interventions with contemporary neuroscience could enhance mental health management, emphasizing personalized treatment based on individual constitution (Prakriti). This review underscores the need for collaborative research between Ayurveda and neuroscience to develop holistic therapeutic strategies, bridging ancient wisdom with modern science for improved

mental well-being. Future studies should investigate the efficacy of Ayurvedic therapies on gut microbiota modulation and mental health outcomes.

[148] Exploring the Effect of Knowledge on Oculometrics with Increasing Task Complexity

Sonali Aatrai (Indian Institute of Technology Kharagpur), Sandhya Prabhala Gayatri (Indian Institute of Technology kharagpur), Saurabh Sharma (Indian Institute of Technology Kharagpur) and Rajlakshmi Guha (Indian Institute of Technology Kharagpur).

Abstract

This study delves into the intricate interplay of prior domain knowledge, task complexity, and eye movements to unravel their collective impact on perception. Investigating oculometrics, this study examines 60 graduate students from backgrounds in Architecture and Mechanical, classified based on their levels of domain knowledge. The participants were assigned tasks of both general and domain-specific nature (architecture and mechanical), each with progressively increasing difficulty levels. Oculometrics of the students were recorded during tasks and analysed to assess the impact of domain-based knowledge and increasing task difficulty. Results show that several eye parameters such as Total Time Duration, Time to First Fixation, Total Dwell Time, etc. are significant during increasing task complexity. Results also suggest that knowledge has a mediating effect on eye parameters with increasing task complexity and it helps individuals who have experience to visualize differently than those who don't have experience.

[155] The Regulation of Emotions in Autobiographical Memory as a Function of Perspective Shifts

Pinky Arya (IIT Gandhinagar) and Frederick L Coolidge (IIT Gandhinagar and University of Colorado).

Abstract

Emotional regulation denotes the intrinsic capacity within individuals to effectively manage and regulate their emotional experiences (Gross & Thompson, 2007). Emotions serve a vital evolutionary function in human survival (Frijda, 1986; Ekman & Davidson, 1994). However, when emotions go unregulated, they can negatively impact psychological health and are linked to psychopathology (Aldao et al., 2010). Individuals vary in emotion regulation skills; while some excel, others may struggle. Emerging evidence suggests that adopting an allocentric shift, an observer's perspective, can significantly influence emotion regulation (Lutz et al., 2012). Webb et al. (2012) found that an adoption of an observer's viewpoint regulated emotions, and King et al. (2022) found that this change in one's perspective diminishes affective and self-related information's experiential and conceptual aspects in autobiographical memories by asking participants to manipulate the perspective. This study explored whether shifting to an allocentric (observer's) perspective in autobiographical memories would impact interpersonal emotion regulation. While commonly employed in therapeutic approaches for clinical populations, these findings are proposed to hold broader relevance for work, educational, and other settings.

[167] Meditation-Based Cognitive Therapy: A Study on EEG Band Power and Sleep Quality Improvement in University Students with Insomnia

Ankita Garg (IIT Mandi), Arun Sasidharan (National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore), Laxmidhar Behera (IKSMHA, IIT Mandi) and Varun Dutt (Indian Institute of Technology Mandi).

Abstract

Poor sleep quality is a major issue in modern life, affecting daily functioning and leading to serious health consequences such as heart diseases, impaired cognitive function, and mental health problems. Previous research has highlighted the importance of developing meditation-based alternative therapies for treatment. However, there is a lack of detailed EEG studies investigating the impact of meditation-based therapies on the treatment of insomnia

through changes in power spectral densities. This pilot study aimed to evaluate a validated, meditation-based therapeutic approach for managing insomnia in university students using Electroencephalography (EEG) features. Twenty participants were evaluated for insomnia using the research diagnostic criteria endorsed by the American Academy of Sleep Medicine (AASM) before being randomly assigned to either the therapy group (Hare Krishna Mantra Based Cognitive Therapy: HMBCT) or the control group (non-therapy). Both groups underwent seven days of intervention, which included sleep hygiene, sleep restriction, and stimulus control. During the seven-day intervention period, each member of the therapy group was given a 30-minute HMBCT training session and asked to practice the therapy before bed. Prior to and following the seven-day treatment period, behavioral assessments and polysomnography recordings were used to evaluate the quality of sleep. The Epworth Sleepiness Scale (ESS) scores decreased by 45% and the Insomnia Severity Index (ISI) scores decreased by 59%, respectively, in the HMBCT group after intervention indicating that HMBCT considerably improved sleep quality measures. Beta band power decreased, and Delta band power increased significantly across all brain regions post-intervention, indicating improved sleep quality. No such changes were observed in the control group. This study suggests that HMBCT can be an effective alternative therapy for treating insomnia in university students.

[168] Cognitive Enhancement through Anodal tDCS to the Left dlPFC: An EEG-Based Performance Assessment Study

Ankush Arya (Indian Institute of Technology Mandi), Shrinithi Sriram (Indian Institute of Technology Gandhinagar), Shamak Chouhan Ghantoo (Jawaharlal Nehru Government Engineering College, Sundernagar), Nitin Rao (Jawaharlal Nehru Government Engineering College, Sundernagar), Ankit Singh (Indian Institute of Technology Mandi), Varun Dutt (Indian Institute of Technology Mandi) and Shubhajit Roy Chowdhury (Indian Institute of Technology Mandi).

Abstract

Transcranial Direct Current Stimulation (tDCS) is an exciting neuromodulatory instrument that can enhance executive function, working memory, and attentional control via the modulation of cortical excitability. Despite this, its neurophysiological processes remain not adequately explored. This research investigates the impact of 2 mA anodal transcranial direct current stimulation (tDCS) on the left dorsolateral prefrontal cortex (dlPFC) with regard to cognitive function and neural oscillatory activity detected by EEG. A double-blind, randomized, pre-test–post-test design was used to assess accuracy, response time, and EEG spectral power during a Change Detection Task, an established assessment of visual working memory and attentional control. The results demonstrated a 12.08% improvement in accuracy (from 66.94% to 79.03%) and a decrease in response time (from 1.33s to 0.92s), suggesting improved cognitive efficiency. EEG analysis showed substantial increases in theta (+55.73%), alpha (+11.22%), beta (+85.48%), and gamma (+173.94%) power, indicating enhanced neural synchronization and executive function. The control group demonstrated minimal changes in spectral power and a decrease in accuracy, so affirming the specificity of tDCS. These results validate neuroplasticity models, demonstrating that tDCS improves synaptic efficacy and network connectivity via modulating task-relevant oscillations in the dlPFC. The present research enhances our understanding of tDCS-induced brain plasticity by correlating cognitive enhancements with spectral power changes. Further studies should examine the long-term effects, optimum stimulation techniques, and therapeutic applications in cognitive enhancement and neurorehabilitation.

[188] Picto Talkzz: Enhancing Early Childhood Cognitive Skills Using an AR-Based App

Akila Rani M (Thiagarajar college of engineering, Madurai, Tamilnadu), Tamilselvi D (Thiagarajar College of Engineering, Maduari, Tamilnadu.), Kavya K (Thiagarajar College of Engineering, Maduari, Tamilnadu.), Deepti B (Thiagarajar College of Engineering, Maduari, Tamilnadu.) and Kayalvizhi G (Thiagarajar College of Engineering, Maduari, Tamilnadu.).

Abstract

Augmented Reality (AR) has revolutionized early childhood education by creating an engaging and personalized learning experience. This article explores PICTO TALKZZ, an AR-based bilingual learning system designed to enhance preschoolers' cognitive development. By integrating adaptive learning, gamification, and real-time progress monitoring, the system supports both English and Tamil, fostering multisensory learning. It includes four interactive AR modules that adapt difficulty levels based on cognitive ability, facilitating skills such as problem-solving, memory, language, attention, and spatial awareness. Developed using Unity for AR and Blender for 3D modelling and animation, PICTO TALKZZ offers dynamic 3D visuals and interactive learning components that boost engagement. Key learning outcomes, such as engagement, cognition, and retention, are mathematically modelled for evaluation. Validation tests, comparing pre- and post-test results, attention spans, and retention rates, demonstrated that AR significantly improves cognitive development compared to traditional methods. The study also addresses concerns like screen time, availability, and legal issues in AR education. The findings suggest that AR enhances engagement, cognitive skills, and bilingual comprehension in preschool children. Future work will focus on scaling the system, AI personalization, and integrating gesture recognition for more immersive learning.

[190] Exploring Themes in Recent Literature in Areas of Music Psychology and Music Therapy

Anushree Bodhale (Department of Psychology, School of Vedic Sciences, MIT ADT University, Loni Kalbhor, Pune) and Amruta Punjabi (Department of Psychology, School of Vedic Sciences, MIT ADT University, Loni Kalbhor, Pune).

Abstract

Music uses tones and rhythms in planned sequences to make artistic pieces of music. Music affects various cortical regions of the brain and this impact has been studied in the field of psychology and neuroscience. Music has been used as an intervention to improve various functions of the brain and treating symptoms of various disorders. Music has also been helpful in aiding social inclusion, self-esteem and other psychological issues. Various methods such as neuroimaging techniques, analysing effects after interventions, correlational studies, survey studies and qualitative studies have been conducted in the area of music psychology and music therapy. The present review analyzes 69 open and free access papers in these domains using online databases between the years 2013 and 2024. First, the analysis of papers is presented based on the methodology employed and then inductively classified into seven broad themes. The significant gaps in the current research trends point out the need for development of musical interventions. A gap between methodologies used predominantly for particular population or particular disorders has also called for widening the scope of various research methodologies.

[136] Nature of Chitta: A Descriptive Study with Special Reference to Rājamārtaṁḍa Vṛtti and Yogavārtika on Yoga Sutra of Patañjali

Arpit K Dubey (Morarji Desai National Institute of Yoga, Ministry of Ayush, Govt. of India, New Delhi) and Jyoti (Morarji Desai National Institute of Yoga, Ministry of Ayush, Govt. of India, New Delhi).

Abstract

The concept of Chitta holds a central and profound place within Indian phil-osophical traditions, particularly in the Yoga Sutras of Patañjali. Chitta, a multi-faceted term, transcends simple translation, encompassing the mind-stuff or field of consciousness, which includes thought, memory, perception, emotion, and subconscious tendencies (samskaras). It is the internal mechanism through which humans interact with, interpret, and respond to the world. In Patañjali's framework, Chitta includes both the conscious and subcon-scious layers of cognition, tightly linked to the concept of vrittis—mental fluctuations that shape our perception of reality. Patañjali defines yoga as "chitta vritti nirodhah," the cessation of these fluctuations, indicating that mastery over the mind's tendencies is essential for self-realization or kaivalya (liberation). Additionally, Chitta is often understood in terms of its com-ponents—Manas (sensory processing mind), Buddhi (intellect and decision-making faculty), and Ahaṁkāra (ego-sense), along with memory or storehouse. This classification helps in comprehending its role in cognition and spiritual evolution. This paper explores the various interpretations of Chitta, particularly through the lenses of

Rājamārtaṁḍa Vṛtti and Yogavārtika on Yoga Sutras of Patañjali, to uncover the intricacies of Chitta and its role in spiritual enlightenment and inner peace. Furthermore, understanding Chitta in this framework has contemporary relevance, particularly in addressing psychosomatic ailments. Since psychosomatic disorders arise from the interplay between the mind and body, studying Chitta provides deep insights into how mental fluctuations contribute to stress, anxiety, and physical illnesses. By applying Yogic principles to regulate and purify Chitta, we can develop effective approaches to mental well-being and holistic healing, making this study highly relevant in modern psychological and therapeutic contexts.

Poster Presentation 2:

6th June- 17:00-18:30 (Foyer)		
Paper ID	**Authors**	**Poster Title**
21	Vivek Sharma	Sambandhatattva and Sāṃkhya: Focus on consciousness, cognition, and the Self
23	Neelam Kumari	Cognitive Processes, Antaḥkaraṇa and Sāṃkhya
38	Sumedh Joshi and Prof. Dr. Tanuja Manoj Nesari	Exploring Quantum Cognition and Ayurveda: A Fusion of Ancient Wisdom and Modern Science
39	Umer Jon Ganai and Braj Bhushan	Neurocognitive and Structural Brain Differences Across ADHD Subtypes in Preadolescents
41	Piotr Podlipniak	Musical Pitch and Rhythm as the Primordial Source of Complex Conceptual Consciousness
81	Samir Roy	Advaita and the Emerging Trends in Solving the Hard Problem of Consciousness
83	Dr. Kinjal Bhatia	The Influence of Rasa Theory on Emotional Trait Identification: An IKS-Based Framework
84	Dr. Amulya Murthy Aku	Ayurveda and Mental Health: A Gut-Brain Axis Approach to Mind-Body Consciousness in Software Engineers
87	Pooja Singh, Mansee Thakur, Veronique Nicolai, Mitesh Thakkar, Poonam Patil	Integrative Heartfulness Meditation & Yoga for Hypertension: Impact on Neuroendocrine Regulation and Inflammation
88	Kavya Joshi	Sensational and Lucid Dreams: Their Affective Modulation and Therapeutic Prospects using Tibetan Dream Yoga
89	Anubhav Chauhan and Shubham Prasad	Exploring Life After Death Through the Lens of Biofield
94	Riya Talwar and Ashu Dhawan	Role of Yoga Nidra in Modulating Brain States for Creativity: A Systematic Review
95	Yash Bhargava	Samkhya-Inspired AGI Framework using Active Inference
107	Samir Roy	Ekajeevavāda Logically Follows from Advita-Vedãntic Brahman and Cartesian Self
109	Divyanshi Thapa and	Frontotemporal EEG Spectral Dynamics as a Biomarker for Paediatric

	Angana Saikia	Epilepsy
112	Naman Dhiman	Evaluating the User Experience through EEG: For Cognitive Modelling
114	Amritha S, Srijan Tuteja, Sriharsha Gudla, Rajakumar Guduru, Saranya C	Mental Health and Stigma: Need for Awareness, Acceptance, and Accessibility of Resources
128	Ananya Shetty and Rama Joshi	Cognitive Manifestations of Dementia Biomarkers: A Mixed-Methods Approach Integrating Systematic Review and Case Studies
144	Pavneet Kaur and Nithin Krishnan	Exploring the Relationship Between Neuropsychological Biomarkers and Learning Pace: A Comparative Study of Slow and Fast Learners Using Observational Method
152	Ashmit Verma, Sukhmani Arora, Harsh Arora, Dr. Arjun Ramakrishnan, Dr. Nitin Gupta, Dr. Nikunj Bhagat, Dr. Sujita Kar	Technology-Guided Breathing with Biofeedback for Improving Mental Health
197	Amrutha A and Jithesh M	Ayurvedic Management of Schizophreniform Disorder – A Case Report
198	Subitha V and Vinod R	Ayurvedic Management of Alcohol Use Disorder – A Case Report
201	Ankit Gupta, Rahul Garg, Sushil Chandra and Varsha Singh	Comparing Positive and Negative Affect Across Prakriti Types and Yoga Experience: A Two-Way ANCOVA Approach
202	Gayatri Nerpagar, Shrinithi Sriram and Vineet Vashista	Exploring the Difference in Emotion Recognition Aided by Facial Expressions and Core Motor Movements Using the Navarasa Stimuli: A Validation Study
207	Shweta Anand, Shweta Anand and Shweta Anand	Deciphering Risk and Protective Factors for Dementia Progression in India
208	Shiv Prasad Sharma, Mridul Dobhal and Anuj Shukla	Brief Mindfulness Training Alters Subjective Experience of Time
218	Vibhuti Vibhuti, Himanshi Saini, Saveri Singh, Aadi Sharma, Bageesha Mukherjee and Neelesh Kumar	Assessment of Traits of Cognitive Loading Through Virtual Reality Environments
221	Sanchita Gupta, Komal Sharma, Arjun Ashok and Dr Suman Dhaka	Exploring the Role of Meditation in Enhancing Affective Cognitive Control and Mindfulness: Implications for Emotional Regulation and Response Inhibition
239	Merrin Joseph, Satheesh K and Aparna P M	Management of Illness Anxiety Disorder with Selected Ayurvedic Protocol: A Case Report

246	Tapaswini Jena and Dr. Sumit Murab	Ayurveda Inspired Osteoinductive Bioinks for Bone Regeneration
248	Dr Shruti Dutt	Emotional Wellness Through Ho'oonoono and EFT by Dr. Shruti Dutt

Saturday, June 7, 2025

Maha-Dvadashi, Jyastha, Shukla Paksha, Vikram Samvat 2082

Morning Session

Schedule	Talks	Session Chair	Venue
9:00-9:45	Plenary 3 Prof. Roumiana Tsenkova	Dr. Anirban Bandyopadhyay	Auditorium
9:45-10:15	Invited Talk 6 Prof. N Srinivasan	Prof. Arnav Bhavsar	Auditorium
10.15-10.45	Dr. Shubhajit Chowdhury (IHub, IIT Mandi)	Dr. Venkatesh Chembrolu	Auditorium
10:45-11:00	Tea Break		Foyer
11:00-13:00	Special Session 10: **Neurotherapeutic Innovation: Integrating Advanced Technologies and Holistic Approaches**	Dr. Tharun Reddy	Hall A
	Special Session 11: **Ancient Healing Practices and Modern Psychology: Exploring Mind, Body, and Environment**	Dr. Amrita Sharma	Hall B
	Special Session 12: **Reincarnation and other Selected Topics in IKS**	Dr. Kunal Mooley	Hall C

Special Session 10:

SS10: Neurotherapeutic Innovation: Integrating Advanced Technologies and Holistic Approaches
June 7, 11:00-13:00 **Venue: Hall A**
Session Chair: Dr. Tharun Kumar Reddy Bollu, IIT Roorkee

[116] The Intention Vs Attention game Illuminating the Dynamics of Consciousness through GCP Replication, Remote Viewing, and the Bengston Method of Healing

Kavan Ganapathy K P (gi4qc.org).

Abstract

In this presentation, we delve into the intricate interplay between intention and attention, exploring how these two facets of consciousness shape our understanding of reality. By synthesizing insights from the Global Consciousness Project (GCP), remote viewing as a tool of intelligence, and the Bengston Method of Healing, we aim to illuminate the patterns that emerge within the fabric of consciousness.

[138] Music Therapy based Stress Prediction using Homological Feature Analysis on EEG Signals

Dhanunjay Reddy Srikireddy (Research Scholar) and Tharun Kumar Reddy Bollu (Asst. Professor).

Abstract

Stress became a common factor in the busy daily routines of all academic and corporate working environments. Everyone checks for efficient stress-buster alternatives to calm down from work pressure. Instead of investing time in unnecessary efforts, this work shows the stress relief scenario of subjects by listening to ”Raag Darbari” music notes as a simple add-on to their schedule. An innovative approach has been implemented on the ”MUSEI-EEG” dataset using Topological Data Analysis (TDA) to analyze this stress relief study. This study reveals that persistent homological features can be robust biomarkers for classifying closely distributed subject data. The proposed TDA

approach framework revealed homological features like birth-death rate and entropy efficacy in stress prediction using Electroencephalogram (EEG) signals with 86% average accuracy and 0.2 standard deviation.

[169] Understanding the Mechanisms of Brainwave Modulation in BCI Neurofeedback for Stress Reduction

Shwetha Sivakumar (Student at Amrita Vishwa Vidyapeetham) and Surya Narayanan Kp (Student at Amrita Vishwa Vidyapeetham).

Abstract

This paper investigates the Brain-Computer Interface(BCI) neurofeedback in modulating brainwave activity for reducing stress. Chronic stress poses an important public health issue for the mental and physical health of an individual, yet its management through conventional means has met with mixed results. Neurofeedback offers such a promising solution that the mechanism by which resultant stress is alleviated is still being explored. This research is geared at answering this question by investigating the use of BCI neurofeedback modulation of specific brainwave frequencies in the reduction of stress state. With the help of BCI neurofeedback training, the participants learned to increase their alpha and theta wave activity and decrease beta wave activity. EEG data were recorded throughout the sessions, and the stress state of the participants was determined via physiological markers of heart rate variability and self reported questionnaires. The results showed a significant decrease of stress levels correlating with increased alpha and theta activity alongside decreased beta waves. Such findings suggest that BCI neurofeedback may also provide a way of modulating brainwave activity for eliciting stress relief, and so have great potential as a range of noninvasive techniques tailored for stress management. This study suggests that BCI neurofeedback may truly be an innovative ascension in the field of mental health wellness and the treatment of the stress-mode disorder.

[257] Non-linear EEG Marker of Mind Wandering During Mantra Meditation among Novice Meditators

Manish Sharma (IKS Research Centre for Philosophical and Cognitive Sciences, ISS Delhi, Delhi), Pushkar Srivastava (IKS Research Centre for Philosophical and Cognitive Sciences, ISS Delhi, Delhi), Parveen Kumar (IKSMHA Centre, Indian Institute of Technology Mandi, Himachal Pradesh), Jyotiranjan Beuria (IKSMHA Centre, Indian Institute of Technology Mandi, Himachal Pradesh) and Laxmidhar Behera (IKSMHA Centre, Indian Institute of Technology Mandi, Himachal Pradesh).

Abstract

Mantra chanting is a meditative practice that enhances cognitive stability and attentional control. This study employs electroencephalography (EEG) to investigate neural differences between attentive and distracted states during mantra chanting in novice meditators, integrating both spectral and nonlinear EEG features. Participants chanted the Hare Krishna Maha Mantra with closed eyes while responding to auditory probes assessing attention. Spectral analysis revealed that distracted states were consistently associated with increased delta power across frontal, central, and parietal regions, suggesting reduced cognitive control and increased internal mentation. In contrast, attentive states showed elevated gamma power in the occipital region, possibly reflecting enhanced perceptual processing. Spectral entropy was also significantly higher during attentive states, especially in the central and occipital regions, indicating greater neural complexity. Overall, both spectral and nonlinear EEG features distinguished attentional states, with spectral entropy emerging as a sensitive marker of meditative focus. The study bridges traditional chanting practices with modern neural assessment techniques, offering promising applications for cognitive training and neurotherapeutic interventions.

[258] Design of Single Element Spherical Cap Transducer for Transcranial Focused Ultrasound Stimulation

Ayushman Jena (JRF Dept of Instrumentation and Control Engineering NITT) and Ezhilarasi Deenadayalan (Professor Dept of Instrumentation and Control Engineering NITT).

Abstract

Transcranial Focused Ultrasound (TFUS) is emerging as a cutting-edge neuromodulation technology due to its non-invasive nature, deep brain penetration, and high spatial resolution. Unlike conventional methods such as Transcranial Magnetic Stimulation (TMS) and Transcranial Direct Current Stimulation (TDCS), which are primarily limited to cortical stimulation, TFUS can precisely target subcortical and deep brain structures. It enables selective ex-citation or inhibition of neural circuits using acoustic pressure waves, eliminating the risks associated with implantable techniques like Deep Brain Stimulation (DBS). Additionally, TFUS offers a tunable, frequency-dependent modulation mechanism and can be integrated with functional imaging for re-al-time neuromodulation. These advantages position TFUS as a transformative tool for treating neurological disorders such as Parkinson's disease, epilepsy, and depression, while also advancing brain research and cognitive enhancement. To optimize TFUS efficiency, a single-element piezoelectric spherical cap transducer was designed and simulated using COMSOL Multiphysics. Frequency domain simulations were conducted to identify resonant modes and ensure efficient power transmission at the target frequency of 650 kHz. Key performance parameters such as acoustic pressure distribution, beam focusing characteristics, and harmonic response were analyzed to validate its ability to penetrate deep brain structures while maintaining spatial precision. The results highlight the feasibility of spherical cap transducers in improving TFUS technology, paving the way for future experimental validation and integration with imaging techniques for real-time neuromodulation and therapeutic applications.

[262] Cubical Complex-Based Topological Signatures in EEG Spectrograms for Reflective States

Kurusetti Vinay Gupta (IIT Kanpur), Kusetti Nehra Sai Surya (Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh), Jyotiranjan Beuria (IIT Mandi) and Laxmidhar Behera (IIT Mandi).

Abstract

Topological Data Analysis (TDA) has recently gained traction in neuroscience for uncovering hidden structures in neural data. However, most studies applying TDA to electroencephalography (EEG) have utilized simplicial complexes to extract topological features. This focus has overlooked the potential of cubical persistent homology, which is particularly well-suited for analyzing grid-like data such as time-frequency spectrograms. The lack of exploration into cubical methods represents a key methodological gap in EEG-based TDA research. In this study, we address this gap by applying cubical persistent homology to EEG spectrograms to investigate two reflective mental states: autobiographical recall and Kirtan meditation. EEG signals are first transformed using the Morlet wavelet transform to produce time-frequency spectrograms that capture both temporal and spectral characteristics of brain activity. Cubical persistent homology is then used to extract higher-order topological features from these spectrograms, preserving their inherent spatial structure. Rooted in the Indian Knowledge Systems (IKS) perspective— which posits that consciousness actively shapes cognitive and emotional states—our approach combines traditional insights with modern computational tools. Our findings show that cubical topological signatures can effectively distinguish between the two reflective conditions using standard machine-learning classifiers. This work highlights the utility of cubical persistence in EEG analysis and demonstrates the promise of integrating IKS-inspired frameworks with advanced topological techniques to deepen our understanding of conscious processing.

[267] Exploring Global Alpha Oscillations as a Marker of Attentional Direction in Mind-Wandering States

Sivert Berg Knudsen (Norwegian University of Science and Technology) and Marta Molinas (Norwegian University of Science and Technology).

Abstract

Mind wandering, an involuntary shift of attention between external and internal default states, plays a dual role in cognition, supporting creativity and future planning while affecting focus and productivity. Despite its significance, objective neural markers of mind wandering remain elusive. This study explores the activity of the EEG alpha band (8–12 Hz) as a neural marker for attentional direction, positioning mind-wandering as a fluctuating state between externally and internally focused cognition. EEG data from two independent datasets were analyzed: one that involved self-reported mind wandering during externally directed tasks and the other from an internally focused meditation paradigm with instructed mind-wandering. The results showed a higher alpha power during internally focused attention compared to mind wandering, aligning with theoretical expectations. However, in externally directed tasks, global alpha power did not follow predicted patterns, suggesting that summing alpha activity across all channels may obscure region-specific dynamics. Inter-subject variability further complicated interpretation, with baseline alpha differences across participants. These findings highlight the limitations of using global alpha power as a standalone marker and underscore the need for region-specific and network level analyses in future research on attentional dynamics.

Special Session 11:

SS11: Ancient Healing Practices and Modern Psychology: Exploring Mind, Body, and Environment		
June 7, 11:00-13:00 Venue: Hall B		
Session Chair: Ms. Amrita Sharma, IIT Mandi		
Priyanka Bhardwaj, Rakesh Sharma and Vijay Chaudhary	Manas Bhava and Diabetes Mellitus: Exploring the Psychological Influence on Disease	177
Vishal Dwivedi and Anukul Goswami	Therapeutic Application of Naad in Refractory Clinical Conditions	231
Dr Ulrich	Agnihotra - A vedic technique and its effects on Environment, Human Mind and Health	Invited Talk
Dr Rose NGONO MBALLA - ABONDO	Integrating traditional alternative medicine/conventional medicine: case study of the management of oncology and rheumatology following ayurvedic approach in Douala, Cameroon	Invited Talk
Dr Irene	Clinical study on a young girl with hysterical symptoms , Jungian psychotherapy and craniosacral approach	Invited Talk
Dr. Antonella Ruffatto	Promotion of healthy lifestyle and well-being activities among healthcare workers in Citadella Hospital Padova, Italy.	Invited Talk

[177] Manas Bhava and Diabetes Mellitus: Exploring the Psychological Influence on Disease

Priyanka Bhardwaj (Ayurvedic Medical Officer, GAHC Sajao Piplu, Distt. Mandi H.P.), Rakesh Sharma (President, Board of Ethics and Registration, NCISM, New Delhi) and Vijay Chaudhary (Dean cum Principal, R.G.G.P.G. Ayurvedic College and Hospital, Paprola, (H.P.)).

Abstract

1 Introduction In recent years, lifestyle disorders have emerged as a critical public health challenge, driven by factors like unhealthy dietary habits, physical inactivity and stress. Research continues to highlight stress as a significant contributor to metabolic imbalances. Prolonged exposure to stressors not only disrupts mental well-being but also weakens the physiological balance, creating fertile ground for lifestyle disorders. Of all the NCDs diabetes mellitus is one of the major concern as The IDF Diabetes Atlas reports that the adult population living with diabetes is projected to rise to 783 million by 2045 [1]. Prameha classified as a Santarpanottha Vyadhi [2] (a disease arising from over-nourishment) in Ayurveda is further divided into two types: Sahaja (congenital) and Apathyanimitaja (acquired) [3]. The latter, attributed to over-nourishment, aligns with the modern understanding of type 2 diabetes mellitus. Ayurvedic literature places significant emphasis on Aaharaj (dietary) and Viharaj (lifestyle) causes in the disease's progression, while also acknowledging the role of Manasika Nidana (psychological factors).This article seeks to provide a comprehensive review of the Ayurvedic understanding of the psychological dimensions in the pathogenesis and management of diabetes.

2 Manas Bhava and psychological impacts on health The Manas (mind) and Indriya (senses) are central to maintaining metal well-being [4] with self-control over psychological urges being vital. Unchecked urges like Lobha (greed), Shoka (grief), Bhaya (fear), Krodha (anger) can predispose individuals to mental disorders [5]. Prajnaparadha, stemming from impaired Dhi (intellect), Dhriti (wisdom), and Smriti (memory), is considered the primary catalyst for disease by aggravating all Doshas [6]. Meanwhile, Asatmendriyartha Samyoga, which arises from a lack of Indriya Nigraha (sensory self-control), further leads to mental imbalances. Vitiation of Sharirik Dosha also directly affects a person's psyche, and conversely. Both are interdependent and play a crucial role in the pathogenesis of diseases [7]. 3 Etiology of Prameha with special reference to Manas Bhava Prameha’s etiology is fundamentally attributed to two interrelated factors: an excessive intake of Madhura (sweet) and Guru Ahara (heavy) foods in conjunction with insufficient physical activity [8]. A critical dimension of Prameha’s pathogenesis is its profound association with Manas Bhava (mental state). Overconsumption is not solely a physiological phenomenon; it is significantly influenced by psychological determinants, particularly unregulated sensory impulses. Specifically, a deficiency in Indriya Nigraha, driven by underlying mental urges, Lobha (greed), Kama (desire), and Laulya (indulgence) results in Asatmendriyartha Samyoga. This maladaptive sensory processing precipitates the excessive ingestion, thereby further destabilizing metabolic processes. Moreover, Ayurveda introduces the concept of Janapadodhwamsa [9], which describes a widespread societal decline. This transition from the moral discipline and spiritual engagement of the Satya Yuga to the emergence of greed and malice in subsequent ages sets the stage for mass-scale health disturbances, including Prameha. In this context, overindulgence and the development of attachment and Alasya (inertia) significantly contribute to metabolic imbalances and the onset of disease. Texts further stratify associated mental states: Paittika Prameha linked to Krodha (anger) [10] while Vatika Prameha is correlated to Shoka (grief), Bhaya (fear), Udvega (anxiety) and Chinta (worry) [11]. In contrast, Kaphaja Prameha is exacerbated by excessive sleep, sedentary behavior and prolonged bed rest[12]. Contemporary research supports these Ayurvedic insights by demonstrating that mental health disorders including chronic depression[13] and schizophrenia[14] are associated with an increased risk of developing diabetes. Factors such as poor dietary practices, physical inactivity, and the prolonged use of antipsychotic medications further compound this risk [15]. 4 Effect of deteriorated Manas in pathogenesis of Prameha Loss of Indriya Nigraha results in excessive consumption coupled with a sedentary lifestyle and Alasya weakens Agni and vitiates Doshas, accelerating disease onset. Kapha predominance and Agni dysfunction play a central role, even wholesome food remains undigested under mental distress, leads to Aama and Dhatvagnimandya. This impairs Medo Dhatu metabolism, causing excessive fat accumulation, muscle weakness, and increased Kleda, ultimately contributing to disease progression. Individuals with Avara Satva (low mental resilience) are supposed to be more susceptible to disease and complications [16]. Chronic stress plays a pivotal role in metabolic disorders by inducing hyperglycemia and insulin resistance, heightening the risk of type 2 diabetes. Prolonged stress activates the sympathoadrenal system, reducing glucose tolerance and increasing cardiovascular risk [17]. HPA axis dysregulation is a key link between stress, depression, and diabetes [18]. The PURE study (120,000 participants) identified higher abdominal obesity among individuals with elevated stress levels, a major diabetes risk factor [19]. Additionally, cumulative lifetime stressors raise diabetes risk by 1.1 to 1.4 times [20]. 5 Holistic management alongside conventional approaches

Ayurvedic disease management follows a multidimensional approach. Satvavajaya focuses on mental strength by restraining the mind from unwholesome influence with tools such as Jnana (self-awareness), Vijnana (disease

education), Dhairya (mental endurance), Smriti (reinforcing positive habits) and Samadhi (meditative stability) [21]. These interventions promote patient education, psychological support, willpower enhancement and spiritual counseling through yoga and meditation. A structured treatment plan under Yuktivyapashraya Chikitsa can be tailored to an individual's Prakriti and disease characteristics. A Sattvika diet, regular physical activity, including the 100-Yojana walk advocated by Acharya Sushruta, and adherence to Dharma, supports diabetes control and longevity [22]. Ayurvedic interventions include Shodhana (purification therapies), along with external therapy aid in stress relief and mental health. Additionally, Medhya Rasayanas possessing Pramehahar properties can be applied in treatment. Daivavyapashraya Chikitsa, often overlooked, employs traditional spiritual practices like Mantra (hymns), Aushadhi (amulets), Homa (oblations), Upavasa (fasting), and Swastyayana (auspicious chants) to regulate neurophysiological and psychosomatic pathways. 6 Conclusion This study examines the link between Manas Bhava (psychological factors) and Prameha (Diabetes Mellitus) through Ayurveda, highlighting the impact of stress, grief, fear, and anger on metabolism and disease progression. The interaction between Sharirika and Manas Dosha underscores the need for a holistic mind-body approach. While Ayurveda offers valuable insights, further research is needed to validate its concepts. Integrating Satvavajaya Chikitsa, meditation, and dietary regulation with modern science can enhance diabetes management. A multidisciplinary approach addressing both mental and physical aspects can lead to more effective, integrative healthcare solutions.

[231] Therapeutic Application of Naad in Refractory Clinical Conditions

Vishal Dwivedi (AA Orthopaedics Consultancy) and Anukul Goswami (AA Orthopaedics Consultancy).

Abstract

Objective: Neuroacoustic, and healing power of sound is recognised means of addressing various clinical conditions used by holistic care practitioners. Protocols have been established to modulate brain activities. While the Indian Knowledge Systems provide great insight into the management of numerous clinical conditions, scientifically validated data is sparse that prevents wider use of Naad in the management of refractory and chronic ailments. This retrospective qualitative study presents the outcome of use of Naad (Anhad Naad) as an adjunct therapy in the management of several refractory clinical conditions under long term management within the NHS. Methods: Patients voluntarily entered the study without stopping or altering the treatment they were receiving from their GP or Hospital Specialist. One hundred and four patients were included in the study with a plethora of clinical conditions. These included Fibromyalgia (4), Hypertension (20), Anorexia Nervosa (20), Sexual Disorder (20), Substance Addiction (20), Multiple Sclerosis (1), Rheumatoid Arthritis (10), PCOS (2), Autism (2), Depression (2), Vertigo (3). The number of the cohort varied between 7 and 65 with wide variation between sexes in different conditions. The clinical conditions under treatment varied from 3 years to 25 years. The trained practitioner (*VD) worked upon the principles of the flow of energy upwards (against gravity) and using the Naad (vibrational sounds whilst chanting). Results: No monitoring devices were used to monitor the effects of the Naad intervention. Subjective outcomes (pre and post intervention) were recorded to determine the outcome of the intervention. Fibromyalgia (4) (two sessions per week) Results- initially positive for all, but relapse occurred in 1. After twenty sessions the patients were largely at comfort with themselves and were able to go out for walks (over 20 minutes), improved sleep, reduced fatiguability with improved ability to carry out their professional activities and household chores. Hypertension (20) (two sessions per week). During the initial thirty sessions, the chanting of the Naad was designed to have longer period of rest with high intensity and higher frequencies Naad sound. The patients were noted to be emotionally stable. The sessions were stopped after total of fifty sessions. The recorded blood pressure was significantly lower at the end of treatment. (Diastolic pressure: pre intervention 100-120, Post intervention 85-92 mm/Hg.) Anorexia Nervosa (20) Initially reluctant to have the Naad sessions, but when they were encouraged by their parents it was noted following the initial seven sessions, they the patients were unable to self-induced vomiting and bulimia. Naad was noted to be assisting in bringing about behavioural changes towards food. Sexual Disorder (20) (Three sessions per week) is classified as a behavioural addiction or compulsive sexual behaviour disorder, where individuals feel an overwhelming and uncontrollable urge to engage in sexual activities. All returned to normalcy in 20 sessions. The patients were diligent in listening to the recordings and also taking a half an walk (outdoors) each day. Substance Addiction (3) (two sessions per week) One amongst them was into weed smoking, second and third patient were into alcoholic addiction. The frequency of consumption had reduced significantly, but still there were relapses. The next twenty sessions showed great improvements in their approach. Multiple Sclerosis (1) (Once a week) This was

associated with Hypothyroidism, varicose veins and endometriosis. In the initial twenty sessions the progress was slow, Naad was chanted at varying sounds and differing frequencies, the progress gained momentum in the next ten sessions as the patient underwent blood tests and its GP brought down the intake of medicine from twice a day to once a day. The pains in the varicose veins had also reduced to the extent that the patient was able to go out for walks, undertake walking on a treadmill, reduced pains during periods. The sessions were later stopped due to financial constraints. Rheumatoid Arthritis (10) (two times a day) After twenty sessions, there pains in their joints had significantly reduced and they were able to carry out their day to day working with ease, however in case of the males the progress was slower in comparison to the females, as they were not able to listen to the recordings and were not able to stay with the sessions PCOS (Polycystic Ovarian Syndrome) (2) (Two sessions per week) Both females had continual body aches. After next twenty sessions, they both were able to have great control over their anger. No mood swings were felt. After the next ten sessions they were able to have the same kind of food others in the families. Autism (2) Both of these patients, initially were not communicative. During the initial ten sessions the patients (children) showed little progress, which later gained momentum. Over time they exhibited much calmer mood and satisfactory outcome with speech therapist and other attending clinicians. Depression (2) (once a week): In twenty-five sessions both patients showed significant improvements in behaviours and social interactions. Vertigo (3) (twice a week) During the initial ten sessions with both these females demonstrated significant changes with reduced occurrence of migraines and light headedness. Conclusion: In the creation of Naad sound there is an interplay of the tongue on the meridian points of the upper palate. The throat, nose, lips, and the air passages were used to produce sound of the right frequency and intensity consistent with the requirement of the patient. In this study these were chanted several times and over several sessions. These Naad sounds produce movement of the subtle energy within the body, whilst travelling through various chakras (confluence of 114 points) that involve both major ones (where the energy changes its form) and some minor (where the energy doesn't change its form but act as feeders to the major chakras. This was done with a view that sound influenced brain neural activities and with the rest of the body. It is anticipated that this sound results in chemical and hormonal secretions in the brain and glandular system resulting in the outcomes presented in otherwise retractable chronic conditions. Scientific studies suggest satisfactory outcome of neuroacoustic treatment. Structured outcome studies are necessary for wider application of Naad in clinical conditions described.

Special Session 12:

Reincarnation and other Selected Topics in IKS
SS12: 7th June- 11:00-13:00
Venue: Hall C
Session Chair: Dr. Kunal Mooley, IIT Kanpur

Paper ID	Autrhors	Presentation/Poster Title	Mode
Invited Talk	Kunal Mooley	Reincarnation Studies	In-Person
Invited Talk	Madhava Kollimarla & Vishal Chinnam	The Three Faces of Sankhya: Karika, Gita, and the Bhagavata	In-Person
200	Hemlata Negi, Nidhi Jindal, Dr. Summiya Parveen and Dr. Aruna Tomar	The Impact of Technology on Sleep Quality and Dreaming	Online
79	Jayashree Aanand Gajjam and Subham Layek	Towards Conceptualizing the Indic Model of Speech Production	Online
34	Dr. Mira Mishra	The Cognitive Science of Experiential Learning: Lessons from Apprenticeship in Traditional	Online

		Societies	
114	Amritha S, Srijan Tuteja, Sriharsha Gudla, Rajakumar Guduru, Saranya C	Mental Health and Stigma: Need for Awareness, Acceptance, and Accessibility of Resources	Online
Invited Talk	Tinni Goswami	Understanding Bhakti Yoga in Gaudiya Vaishnavism: A Case Study Based on Bhaktisiddhanta Sarasvati's Religious Philosophy of Krishna Consciousness	Online
207	Shweta Anand	Deciphering Risk and protective factor for Dementia Progresion in India	Online

[200] The Impact of Technology on Sleep Quality and Dreaming

Hemlata Negi (Dept. of English, Applied Sciences and Humanities, COER University Roorkee Uttarakhand, India), Nidhi Jindal (English, Applied Sciences and Humanities,COER University), Dr. Summiya Parveen (Associate Professor, Mathematics, College of Allied Sciences, COER University) and Dr. Aruna Tomar (Associate Professor, Physics, College of Allied Sciences, COER University).

Abstract. The development of technology has considerably impacted most aspects of human life, including sleeping and dreaming. As our dependency on electronic devices increases, there is increasing concern about how technology affects our ability to dream and sleep. Excessive screen time, especially before bed, has been leading to sleep disturbances by interfering with circadian rhythms and causing melatonin production to be disrupted. The blue light emitted by screens and the constant engagement with electronic media can postpone the onset of sleep and reduce overall quality of sleep. Additionally, the prevalence of technological distractions can increase cognitive arousal, making it harder for people to relax and get a deep, restorative sleep. On the other hand, new technologies like sleep tracking apps and devices have the potential to provide insightful information about sleep patterns, though their influence on sleep architecture is still complicated. In additional, technology's role in shaping and influencing the content and frequency and type of dreams is also being explored, with studies shows that more exposure to digital media may affect dream themes, emotional tone, and dream's vividness. This abstract summarizes the increasing literature on the relationship between technology and sleep, both the terms of disruptive effects on sleep quality and the potential changes in dreaming patterns. The implication of these findings is significant for individuals' overall health, highlighting the need for a balanced relationship with technology to promote better sleeping behavior and improves our dream.

[79] Towards Conceptualizing the Indic Model of Speech Production

Jayashree Aanand Gajjam (Assistant Professor, Centre of Excellence for Indian Knowledge Systems, IIT Kharagpur) and Subham Layek (PhD Research Scholar, Centre of Excellence for Indian Knowledge Systems, IIT Kharagpur).

Abstract:
Bhārata has a rich tradition of language science woven together with grammar and philosophy, where Parā Vāk (Speech) is considered the eternal entity which has manifested itself into the Madhyāmā Vāk, which itself is the cause of further Vaikharī Vāk. Even though, the texts are primarily written in Sanskrit language, many linguistic theories are language-independent and are based on the basic human mechanism of language processing. This research is an extension of early research by the author that (1) tries to find the parallels between the ancient Indian and Western theories of language, and (2) discovers the ideas on phenomenology through Bhartrihari's concept of Śabda-brahman (the Supreme Speech Principle). This paper attempts to conceptualize a theoretical framework of Speech Production based on indigenous knowledge systems of India that will stand as a starting point in (a) validating the model experimentally (both by empirical and phenomenological research), and (b) using the same in different kinds of linguistic research.

[34] The Cognitive Science of Experiential Learning: Lessons from Apprenticeship in Traditional Societies

Dr. Mira Mishra (School of Education and Humanities, Manav Rachna University).

Abstract. Experiential learning, rooted in hands-on, reflective practices, has long been central to traditional societies, particularly through apprenticeship-based knowledge transmission. This study explores the cognitive science underlying experiential learning within these contexts, emphasizing the role of observation, imitation, and participation in skill acquisition. By examining indigenous practices such as artisanal crafts, agricultural techniques, and healing rituals, this research elucidates how culturally embedded learning strategies foster cognitive and social development. The study aims to draw on interdisciplinary frameworks, integrating cognitive psychology, anthropology, and education to analyze the interplay between sensory engagement, memory systems, and contextual problem-solving. The research paper aims to highlights how traditional apprenticeship nurtures adaptive expertise by blending theoretical understanding with practical application in real-world settings. The findings reveal the importance of scaffolded learning environments, mentorship, and iterative feedback in fostering deep cognitive engagement and long-term retention of knowledge. Furthermore, the research discusses the implications of these insights for modern education systems. By reintroducing experiential learning principles, educators can design more inclusive and culturally sensitive pedagogies that cater to diverse learning styles. This paper advocates for the integration of traditional apprenticeship models into contemporary skill development programs, especially in vocational education and sustainability practices. In conclusion, the cognitive science of experiential learning offers profound lessons from traditional societies, demonstrating how knowledge transmission rooted in practice and culture can address current educational challenges and foster holistic learning. This synthesis of ancient wisdom and modern cognitive theory underscores the enduring relevance of apprenticeship as a transformative learning paradigm.

[114] Mental Health and Stigma: Need for Awareness, Ac-ceptance and Accessibility of Resources

Amritha S (Indian Institute of Management Rohtak), Srijan Tuteja (Indian Institute of Management Rohtak), Sriharsha Gudla (Indian Institute of Management Rohtak), Rajakumar Guduru (Indian Institute of Technology Bhubaneswar) and Saranya C (Mepco Schlenk Engineering College).

Abstract. “Mental Health is a Universal Human Right,” and it has been recognized, accepted, and celebrated across the world. Today, mental wellness is viewed and cared for as the positive attribute of overall wellbeing of people in any developed society. However, even at present, any open talk or discussion about mental health is widely misunderstood and stigmatized in many societies. As a result, many people are not open talking about mental health issues although they suffer from them. Hence, there is necessity for proactive awareness campaigns and mental health advocacy to challenge these existing stereotypes. Therefore, this paper aims at promoting mental health awareness among people in reducing stigma attached to openly talking about it. It also examines the reasons causing mental health issues and offers possible solutions. For this purpose, survey questionnaire was administered to 40 participants who are mostly in the age group of 18-25. Literature view was gathered from past research and various online sources. Additionally, personal interviews with people of different age groups and professions were conducted. Data was analyzed and presented quantitatively and qualitatively. The findings show that increased awareness leads to greater acceptance and accessibility of mental health resources. Finally, the real-world activities which advocate the need for openness, empathetic attitudes of people and support systems were presented.

Saturday, June 7, 2025

Maha-Dvadashi, Jyastha, Shukla Paksha, Vikram Samvat 2082

Afternoon Session

Schedule	Talks	Session Chair	Venue
14:00-16:30	Regular Session 11: **Neurocognitive Dimensions of Meditation and Biofeedback**	Prof Chayan Nandi, IIT Mandi	Hall C
	Regular Session 12: **IKS and the Continuum of Consciousness**	Prof. Dr. Santosh Rajguru	CnP(Hall D**)**
16:30-17:00	Closing ceremony		Auditorium

Regular Session 11:

RS11: Neurocognitive Dimensions of Meditation and Biofeedback Time: 14:00-16:30, Hall C Session Chair: Prof Chayan Nandi, IIT Mandi		
Paper ID	**Paper titles**	**Authors**
195	Electroconvulsive Therapy in Children and Adolescents: A Comprehensive Review of Efficacy, Safety, and Ethical Considerations	Simran Shankar, Somya Singh and Dr Sanchi Agarwal
199	Why meditate? A comparison of experts' vs novices' meditators through an EEG study	Naumithaa Reddy Vanimireddy, Sai Manikanta Bollam, Akshita K, Sandhya Banda, Mukesh Narmetta, Visalakshi Talakokula, Sri Kalyana Rama Jyosyula and Kondaiah P
212	Effects of Mindful Unilateral Nostril Breathing on Cognitive Performance: A Pilot Study	Satyam Tiwari, Neha Bhargava and Arnav Bhavsar
225	Towards Affordable Biofeedback System for Mental Relaxation	Kulbhushan Chand, Arun Khosla and Varun Dutt
226	Nādānveṣaṇa: A Multiscale Exploration of Acoustic Cues in Indian Traditional Music, Their Neuro-biophysical and Cognitive Impacts	Priyankari and Arnav Bhavsar

[195] Electroconvulsive Therapy in Children and Adolescents: A Comprehensive Review of Efficacy, Safety, and Ethical Considerations

Simran Shankar (Junior Research Fellow), Somya Singh (Junior Research Fellow) and Dr Sanchi Agarwal (PhD Supervisor).

Abstract

Electroconvulsive therapy (ECT) has had a long standing reputation of being perceived as dangerous. This paper reviews studies from 1980 to 2021 exploring the use of ECT in children and adolescents from around the world. Specific objectives of this paper are to examine (1) the effectiveness of ECT in children and adolescents, (2) which psychiatric illnesses primarily indicate ECT treatments, and (3) side effects experienced post - ECT (if any). ResearchGate and Pubmed were used to access 46 studies including patients under the age of 19, suffering from psychiatric illnesses. Results indicated that ECT was 95% effective in treating children and adolescents. The illnesses which indicated the need for ECT the most were Mood Disorders and Catatonia. Acute and transient side effects

were noted in 37% of the studies, majorly including Headache, Prolonged seizures and Memory impairment. It can be concluded that ECT is a safe and effective treatment method for severely debilitating psychiatric illnesses in children and adolescents; and must be continued as a second line of treatment when necessary.

[199] Why meditate? A comparison of experts' vs novices' meditators through an EEG study

Naumithaa Reddy Vanimireddy (École Centrale School of Engineering, Mahindra University), Sai Manikanta Bollam (École Centrale School of Engineering, Mahindra University), Akshita K (École Centrale School of Engineering, Mahindra University), Sandhya Banda (School of Management, Mahindra University), Mukesh Narmetta (School of Management, Mahindra University), Visalakshi Talakokula (École Centrale School of Engineering, Mahindra University), Sri Kalyana Rama Jyosyula (École Centrale School of Engineering, Mahindra University) and Kondaiah P (École Centrale School of Engineering, Mahindra University).

Abstract

A study conducted by Pew Research in 2023 shows that 22% of Americans meditate regularly to feel a connection with the self. An additional 16% of American adults claim they meditate for health, enjoyment, or other reasons. Similarly, a study conducted by Bryan emphasizes the importance of meditation at the workplace by institutionalizing practices that encourage employees to take meditation breaks. In line with this, our current study investigates the role of spirituality, specifically meditation, in enhancing an individual's overall well-being. The study aims to evaluate the difference between novice meditators and the expert meditators, through understanding their state of equanimity (mental stability and sense of calmness). We utilize publicly available EEG data to extract and analyse the channel information associated with the brain wave patterns. Out of the 64 EEG channels, we considered channels that are associated with a sense of calmness and stability, i.e., alpha and theta states. These two states primarily originate in the occipital and Frontal lobes of the brain, respectively. The analysis was conducted using the EEG lab of the MATLAB software. The results show notable trends like an increase in amplitude over time, suggesting enhanced neuronal activity and synchronisation during meditation; a decrease in amplitude, potentially indicating relaxation or disengagement of brain regions; and distinct peaks, which correspond to cognitive or emotional processes during meditation. These findings may provide a comprehensive understanding of how alpha and theta waves influence the body and mind responses to external interventions in novice and expert meditators.

[212] Effects of Mindful Unilateral Nostril Breathing on Cognitive Performance: A Pilot Study

Satyam Tiwari (IKSMHA Centre, IIT Mandi, Mandi, Himachal Pradesh-175005, India), Neha Bhargava (Department of Yoga Studies, Central University of Kerala, Kasaragod, Kerala- 671316, India) and Arnav Bhavsar (IKSMHA Centre, IIT Mandi, Mandi, Himachal Pradesh-175005, India).

Abstract

The nasal cycle is defined as the alternating constriction and dilation of the passage of the respective nasal cavities. Its regulations are made by the autonomic nervous system and are said to affect psycho-physiological functions differently. This pilot study investigates the effects of mindful unilateral nostril breathing (UNB) on cognitive performance. Ten healthy individuals were randomly assigned to left nostril breathing (LNB) or right nostril breathing (RNB) groups. Cognitive performance was tested using mathematical processing tasks of varying complexity (2 to 4 digits). The preliminary findings suggest that LNB produced better improvement in the processing speed, but accuracy was reduced. The RNB groups demonstrate balanced improvement in reaction time with an increase in accuracy. These initial findings suggest a dynamic relationship between nostril-based breathing techniques and cognitive performances. The findings provide insights into the differential therapeutic implications of nostril-based breathing.

[225] Towards Affordable Biofeedback System for Mental Relaxation

Kulbhushan Chand (IIT Mandi iHub and HCi Foundation, Indian Institute of Technology Mandi, HP, India - 175075), Arun Khosla (Dr B R Ambedkar National Institute of Technology Jalandhar, Punjab, India – 144008) and Varun Dutt (School of Computing and Electrical Engineering, Indian Institute of Technology Mandi, HP, India - 175075).

Abstract

The rising prevalence of stress-related mental health disorders highlights the need for accessible, non-pharmacological interventions. Biofeedback offers a promising approach by enabling individuals to regulate physiological processes for stress management and mental relaxation. This review examines 45 studies on biofeedback for mental relaxation detailing the core components of biofeedback systems (participant, data acquisition system, and feedback modalities) and discusses experimental protocols used in existing research. The understanding was that the key techniques include photoplethysmography (PPG), electrodermal activity (EDA), respiration (RSP), and electrocardiography (ECG), with visual feedback being the most common modality. Gamification is increasingly integrated to enhance user engagement. Despite their effectiveness, traditional biofeedback systems remain costly and complex, limiting accessibility. The lack of standardized biofeedback games and open-source research further restricts reproducibility. To address these challenges, this review advocates for cost-effective solutions using open-source hardware and software. Integrating retro gaming platforms, such as the Nintendo Entertainment System (NES), is proposed to improve engagement and accessibility. By identifying key challenges and opportunities, this review informs future research on affordable, replicable biofeedback systems, supporting their broader adoption in mental health care.

[226] Nādānveṣaṇa: A Multiscale Exploration of Acoustic Cues in Indian Traditional Music, Their Neuro-biophysical and Cognitive Impacts

Priyankari Priyankari (Indian Institute of Technology Mandi) and Arnav Bhavsar (Indian Institute of Technology Mandi).

Abstract

Indian traditional music, rooted in the concept of Nāda (primordial sound), offers a structured approach to understanding sound as both a cognitive and vibrational phenomenon. It extends beyond auditory perception, influencing neural activity, physiological states, and consciousness. Rhythmic vocalizations like Koṇṇakōl—a percussive syllabic system—demonstrate cognitive benefits, enhancing auditory processing, working memory, and motor coordination. Studies suggest that structured sound patterns modulate brain activity, optimize cognitive function, and contribute to neuroplasticity. Temple acoustics, which shape the perception and transmission of sound, further exemplify the intricate relationship between vibration and human experience. Integrating these ancient traditions with modern neuroscience can unlock new applications in cognitive enhancement, therapy, and education. The ability of rhythmic and melodic structures to regulate attention, memory, and stress suggests potential interventions for learning disorders and age-related cognitive decline. Nāda is also perceived as a vibrational force that extends beyond the brain and body, hinting at an uncharted dimension of consciousness. Investigating these principles through experimental tools such as EEG, HRV, fNIRS could provide empirical validation of traditional knowledge, bridging ancient wisdom with contemporary scientific inquiry. This comprehensive review paper explores the multifaceted impact of acoustics in traditional systems of India and other native practices on cognitive and neurophysiological processes by examining their influence on neural connectivity, learning, and emotional regulation. The discussion provides a critical analysis of their significance within scientific and traditional knowledge frameworks.

Regular Session 12:

RS12: IKS and the Continuum of Consciousness
Parallel Session 1 (14:00-16:30)- Hall D
Session Chair: Prof. Dr. Santosh Rajguru

Paper ID	Paper titles	Authors
267	Sivert Berg Knudsen and Marta Molinas	Exploring Global Alpha Oscillations as a Marker of Attentional Direction in Mind-Wandering States
5	Recreating Human Consciousness: The Feasibility of Rebirth through Full Data Replication and Brain Simulation	Shashi Anand
147	Wordsworth: An Eco-Hindu Poet : An IKS Approach	Prof. Dr. Santosh Rajguru
170	Behavioural Issues Among Children with Neurodevelopmental Disorder Following COVID-19	Ashfaq Ahmad Dangroo and Ravindra Singh
181	Fetal Consciousness and Maternal Influence: A Comparative Study of the Garbhopanishad and Maternal-Fetal Attachment (MFA) Perspectives	Prof. Sampadananda Mishra And Anusree S.L

[5] Recreating Human Consciousness: The Feasibility of Rebirth through Full Data Replication and Brain Simulation

Shashi Anand (Independent).

Abstract

The prospect of human rebirth through data replication and advanced brain simulation lies at the intersection of artificial intelligence, neurobiology, and philosophy. As technology progresses, reconstructing an individual's life experience—ranging from neural development to cognitive states—poses profound challenges and opportunities. This paper explores the feasibility of recreating a human's mental and cognitive profile through data collection, neural mapping, and brain emulation technologies. The study focuses on three key areas: (1) Technological Feasibility—examining methods for capturing experiential and neurological data; (2) Biological Complexity—analyzing the complexities of neural architecture and replicating subjective experience; (3) Ethical Considerations—evaluating the moral and philosophical implications of reconstructing consciousness. Drawing on insights from over 30 studies and emerging technologies, this research provides a comprehensive framework for understanding the frontier of human experience replication. The study integrates interdisciplinary perspectives from neuroscience, artificial intelligence, philosophy of mind, and computational biology, offering a rigorous approach to exploring the transformative potential of reconstructing consciousness.

[147] Wordsworth: An Eco-Hindu Poet : An IKS Approach

Prof. Dr. Santosh Rajguru (Rayat Shikshan Sanstha's, Balwant College, Vita, Ta-Khanapur, Dist-Sangli).

Abstract

Ecocriticism as a literary ecological philosophy directly/ indirectly engages ecological concerns and contexts. Moreover it looks at the depictions of natural sights and landscapes along with people's attitudes and attentions towards nature; may be favorable or unfavorable. In fact this sort of attempt negotiates between literature and ecology. The present author by this paper attempts to add one more interesting feather to the Wordsworth scholarship going by Hinduism. Hinduism believes in oneness of God and all other worldly manifestations. Only it can provide a safe solution to whole world maladies pertaining to art, life, culture, and moreover today's burning problem- global eco-crisis. Spirituality of the East never taught schemes of exploitation and appropriation. In the ancient Hindu traditions, man was looked upon as part of nature, linked inextricably with elements around him. The Hindu tradition is the oldest living religious tradition in the world. It believes in the all-inclusive world-view.

[170] Behaviour Issues Among Children with Neurodevelopmental Dis-order

Followed COVID-19

Ashfaq Ahmad Dangroo (Department of Social Work University of Delhi) and Ravindra Singh (Bhim Rao Ambedkar College, University of Delhi.).

Abstract

Children with neurodevelopmental problems struggle in daily life to recognise emotions, re-gardless of the diagnosis. Around 48% of pre-schoolers and 61% of school-age children had CBCL internalizing, externalizing, and total scores that were sub-clinically or clinically elevated. Due to COVID-19, various patients have lost follow-up for therapy, and the dropout rate has also increased in therapy, which has drastically increased the behaviour issues in children. The objective of this paper is to understand the behavioural issues in children with neurodevelop-mental disorders, followed by COVID-19. The study was based on secondary data, in which the content analysis method was used followed by thematic analysis. The search was limited to journals in English from 2019-2023 and search keywords included terms, COVID-19, Behav-ioural issues, Neurodevelopmental disorders. Due to social isolation, parents reported increased levels of family stress, despair, and anxiety, which has harmed the development of the child. Due to the significant changes in their lifestyle, level of physical activity, and mental ramblings, children confined to their homes experience both immediate and long-lasting psychosocial ef-fects. The impact of COVID-19 intensifies more in children who already have any underlying psychological or neurodevelopmental disorders.

[181] Fetal Consciousness and Maternal Influence: A Comparative Study of the Garbhopanishad and Maternal-Fetal Attachment (MFA) Perspectives

Prof. Sampadananda Mishra And Anusree S.L (Prof. Sampadananda Mishra (Director, CHS) and Anusree (Research Associate)).

Abstract

The Garbhopanishad, a significant text within the Indian Knowledge Systems , provides profound insights into fetal consciousness, emphasizing the influence of a mother’s thoughts, emotions, and spiritual practices on the unborn child. It describes the fetus as a sentient being, capable of memory formation, emotional experience, and responsiveness to external stimuli, highlighting the importance of Samskaras (impressions) in shaping an individual’s future. In contrast, contemporary research on Maternal-Fetal Attachment (MFA), as discussed in Eichhorn’s study, debates the presence of fetal sentience and its role in shaping the prenatal bond. While Western psychology struggles with defining attachment due to the lack of clear reciprocal interactions between the mother and fetus, the Garbhopanishad inherently recognizes the bi-directional influence between maternal consciousness and fetal development. This study explores the comparative framework between the Vedic understanding of fetal sentience and modern discussions on MFA. Eichhorn’s study suggests that while research has demonstrated fetal responses to pain, touch, sound, and maternal emotions, these reactions are often dismissed as preprogrammed subcortical activities rather than conscious interactions. However, the Garbhopanishad posits that the fetus is an aware and learning entity, deeply influenced by the mother’s mental and spiritual state, reinforcing the idea of prenatal conditioning. By integrating ancient Indic wisdom with modern perspectives on maternal-fetal relationships, this paper argues that prenatal consciousness is a significant factor in fetal development, urging a re-evaluation of MFA beyond physiological and psychological dimensions. The findings suggest that recognizing the spiritual aspect of prenatal life, as highlighted in the Garbhopanishad, can offer a more holistic approach to pregnancy, maternal well-being, and early childhood development.