Sumedh Joshi, PMP®

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EDUCATION

Columbia University   *New York, NY*
MS in Mechanical Engineering (GPA - 3.51/4)   Sept 2022 – Dec 2023
Coursework: Sustainable Manufacturing, Carbon Sequestration, Advanced Heat Transfer, Energy Sources and Conversion, Mechanical Behavior of Materials, Space Vehicle Dynamics, Nanotechnology, Data Science for Mechanical Systems.
Key Achievement: Nucleate NY Activator 2024 Finalist Cohort, Altair Engineering Inc. Campus Ambassador.

Dr. Vishwanath Karad MIT World Peace University   *Pune, India*
B. Tech, Mechanical Engineering (GPA – 8.9/10)   July 2017 – July 2021
Coursework: FEM, Mechanical System Design, Computational Fluid Dynamics, Product Lifecycle Management.
Key Achievements: Published seven research articles in Scopus and SCI-Indexed Journals from 2020-2024 in Machine Design, CFD, and IoT domains, and won 2 Best Presentation Awards at reputed research conferences.

EXPERIENCE

KBR, Inc.   *Houston, TX*
Associate Technical Professional - Sustainable Technology Solutions   Jan 2024 - Current
- Managing the design, procurement, fabrication, and logistics of two Fluid Catalytic Cracking (FCC) equipment supply projects in Europe, involving a global engineering and procurement team, with a combined value of $2 M.
- Supporting project managers with tracking, analyzing, and executing key project management activities for four proprietary technology projects in FCC, Supercritical Extractors, and Plastic Recycling, with a combined value of $25 M.
- Collaborating in a market entry study and business case development for KBR's entry into the data center EPC industry.
- Engaged in multiple studies involving market study and target company valuation exercises using DCF and Transaction Comps models to support strategic M&A decisions in the Ammonia, Urea, Industrial Catalyst, and Hydrogen industries.
- Conducted intensive market research and analysis in the proprietary equipment domain concerning KBR's key technology portfolio (Oil & Gas Refining, Ammonia Converters, Plastic Recycling, and Industrial Catalysts) to help position offerings and entry into new markets, resulting in contract renewals and new licensing deals worth $20 M.

Altair Engineering Inc.   *Troy, MI (Hybrid)*
CAE Validation Intern   May 2023 - Sept 2023
- Developed software quality assurance automation tests for Altair HyperWorks and HyperMesh functionalities, such as CAD Model Analysis and HyperMesh Postprocessing FE Results using Tool Command Language (TCL) and Python.
- Identified important manual testing instances and deployed TCL automation scripts for Optistruct and Nastran solvers in the latest production build, saving 200+ hours of engineering time and resources.

RESEARCH AND ACADEMIC PROJECTS

Development and Analysis of a CCUS Facility for the Heidelberg Cement Plant   *Columbia University, NY*
Tools: Microsoft Excel, Python, MATLAB   Sept 2023 - Dec 2023
- Analyzed the impacts of retrofitting a hypothetical Post Combustion Point Source Carbon Capture Technology at the Heidelberg Cement Plant at Mitchell, IN, using the MEA (Monoethanolamine) solvent for carbon capture with 90% efficiency and Geological Saline Aquifer Storage to reduce Carbon Emissions and Ecological Impact.
- Conducted a thorough techno-economic review with indicator assessment and sensitivity analysis to quantify the economics of retrofitting the CCUS facility, as well as an environmental impact study and life-cycle analysis to justify the ecological benefits. Achieved a massive Carbon Emission reduction of 2.2 Mt CO_2/year.

Study of Urban Heat Island Effect over New Delhi and Surrounding Area   *Columbia University, NY*
Tools: Python, MATLAB, WunderGround Weather Station Records   Feb 2023 – May 2023
- Studied the relationship between LST (Land Surface Temperature), vegetation, and precipitation over New Delhi and the surrounding area. Performed a regression analysis to quantify this relationship using LST data and satellite-derived Normalized Difference Vegetation Index data from 7 Wunderground Weather Stations.
- Devised a heat transfer model based on humidity, hourly precipitation, vapor pressure, and sensible heat to find the dependence of LST on precipitation for the monsoon season.

Analysis of Energy Supply Scenarios for Electricity Price Minimization in NY   *Columbia University, NY*
Tools: MATLAB, Excel   Sep 2022 – Dec 2022
- Devised a methodology to optimize the utility of renewable resources and non-renewable resources with the current NY state electricity infrastructure to minimize GHG emissions and electricity prices by 30%.

SKILLS AND CERTIFICATIONS

- Software, Tools, and Programming Languages: SolidWorks, Siemens NX, Altair HyperWorks, ANSYS (APDL, ACP, Fluent and CFX), PROTEUS, AutoCAD, Siemens FEMAP, MATLAB Simulink, FemFat, Altair Hypermesh, ARAMIS Pro, MasterCAM, Microsoft Excel, Tableau, Microsoft Project, ImageJ, Sustainable Minds LCA tool, C, Python, R, TCL.
- Certifications and Courses: PMP®, CFA Investment Foundations Certificate, Wall Street Prep Financial and Valuation Modeling, Digital Manufacturing, Financial Markets, Six Sigma Principles.
- Activities: World Economic Forum Global Shapers Houston Hub Member, Energize Tomorrow Weekly Blog.