



Mai CoE
Malaysia AI
Centre of Excellence
Smart Ideas. Smarter Nation



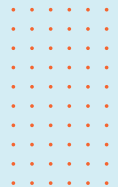
AI-Powered Solutions Machine Learning & Deep Learning

for Business and Industry



HRD Corp Claimable Course ID: 10001662104

Gain practical skills in AI, Machine Learning, and Deep Learning to design impactful solutions for business and industry. Learn to build, evaluate, and deploy data-driven models that improve decision-making, efficiency, and risk management through hands-on exercises, real-world case studies, and a capstone project focused on solving real operational challenges.



More Info

www.maicoe.org

info@maicoe.org



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Programme Overview

This course equips participants with practical knowledge and hands-on skills to design and implement AI-powered solutions using Machine Learning (ML) and Deep Learning (DL) for real-world business and industrial applications. The programme emphasises how data-driven models can be used to solve operational problems, improve decision-making, increase efficiency, and manage risk across multiple industries.

Participants will learn core ML techniques such as regression, classification, clustering, and anomaly detection, followed by deep learning methods including neural networks and convolutional neural networks (CNNs). The course focuses not only on building models, but also on evaluating performance, interpreting results, and selecting suitable use cases that deliver measurable business value.

Through guided hands-on exercises, industry-inspired case studies, and a capstone mini project, participants will gain experience developing end-to-end AI solutions, from problem definition and data preparation to model development, evaluation, and deployment considerations. Ethical AI, governance, and operational readiness are integrated to ensure responsible and sustainable AI adoption in business and industrial environments.

26%

Productivity improvements when companies using AI-Powered Solutions

Source: Fullview 2025

78%

of companies worldwide report using AI technologies in their operations.

Source: Elfsight 2025





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Key Takeaways

By the end of this programme, participants will be able to:

- **Explain fundamental concepts, terminology, and learning paradigms in Machine Learning and Deep Learning** for business and industry applications.
- **Apply basic machine learning techniques (regression, classification, clustering, and anomaly detection)** to solve practical business and industrial problems using real datasets.
- **Evaluate and interpret model performance** using appropriate metrics, and identify common issues such as overfitting, bias, and data leakage.
- **Design and train simple deep learning models**, including neural networks and convolutional neural networks, for applied use cases.
- **Identify suitable AI-powered solution opportunities** within their organization and communicate insights effectively to technical and non-technical stakeholders.
- **Recognize ethical, governance, and deployment considerations** to ensure responsible, trustworthy, and sustainable AI solutions.

“ This course provides a valuable opportunity to understand how Artificial Intelligence, Machine Learning, and Deep Learning can be applied to real business and industrial challenges. I believe the combination of theoretical concepts and hands-on exercises helps participants gain practical skills in building and evaluating AI models. The inclusion of real-world case studies and a capstone project makes the learning experience more meaningful and relevant. Overall, the course can help professionals improve decision-making, efficiency, and innovation through responsible and effective use of AI technologies.

Rayner Alfred
Professor of Computer Science (AI)
BoD MIMOS (2019 - 2026)
INED Paynet (2025 - Present)

Who is this programme for?

This programme is designed for :

- ✓ **Managers & Team Leads** – Digital Transformation Managers, Operations Managers, Product Managers, Analytics Managers
- ✓ **Technical Professionals** – Software Engineers, System Analysts, IT Officers, Data Engineers
- ✓ **Data & AI Practitioners** – Data Analysts, Data Scientists, Machine Learning Engineers, AI Engineers
- ✓ **Business & Process Owners** – Business Analysts, Process Improvement Leads, Innovation Officers
- ✓ **Risk, Governance & Compliance Roles** – Risk Officers, Audit Professionals, Compliance Officers overseeing AI-enabled systems
- ✓ **Senior Executives & Decision Makers** – Heads of Department, CIOs, CTOs, Digital Strategy Leads



Programme Curriculum

MODULE 1: Introduction to AI-Powered Solutions & ML Landscape

- AI vs ML vs DL and learning paradigms;
- Data, features & labels;
- ML pipelines;
- Industry use cases;

Purpose: Establish foundational understanding of AI-powered solutions and how ML/DL support business and industry use cases

MODULE 2: Supervised Learning for Business Solutions

- Linear and Logistics Regression;
- Classification with Decision trees;
- Classification with k-NN;
- Feature engineering; model training & validation;

Purpose: Enable participants to apply supervised ML techniques to solve structured business problems

MODULE 3: Model Evaluation & Performance Pitfalls

- Evaluation metrics;
- Overfitting & underfitting;
- Data leakage; class imbalance;
- Interpretability basics;

Purpose: Develop capability to evaluate ML models and recognise common performance and reliability issues

MODULE 4: Unsupervised Learning & Anomaly Detection

- Clustering methods and PCA;
- Anomaly detection concepts;
- Industry use cases (fraud, quality, cybersecurity);

Purpose: Equip participants to discover hidden patterns and detect unusual behaviour in unlabeled data

MODULE 5: Neural Networks & Deep Learning Fundamentals

- Artificial Neural Networks
- Network architecture;
- Activation & loss functions;
- Backpropagation;
- Multi-Layer Peceptron;
- Deep Learning frameworks;

Purpose: Build foundational understanding of neural networks and deep learning for complex problem solving

MODULE 6: CNNs & Applied Deep Learning Solutions

- CNN architecture;
- Feature extraction;
- Transfer learning;
- Applied DL use cases

Purpose: Enable participants to apply deep learning to image and pattern recognition problems



Programme Curriculum

MODULE 7: Responsible AI, Governance & Deployment Readiness

- Explainable AI;
- Bias & fairness;
- Model lifecycle;
- Monitoring & drift management

Purpose: Develop awareness of ethical, governance, and operational considerations in AI deployment

MODULE 8: Capstone Mini Project: AI-Powered Solution Design

- Problem framing;
- Data selection;
- Model choice; evaluation;
- Communication of insights

Purpose: Integrate learning into an end-to-end AI-powered solution aligned to business or industry needs

Programme Highlights



In-person session

Engage directly with AI industry experts in an interactive, face-to-face learning environment designed to provide practical insights into the latest advancements in AI and their real-world applications in business.



Cutting-edge content

Learn through a practice-oriented curriculum developed by MAICOE, integrating real industry case studies and insights from HRD Corp Accredited Trainers to deliver relevant, impactful, and experience-driven learning.



Capstone project

Develop a practical AI strategy and implementation roadmap that aligns with your organisation's goals, governance requirements, and long-term strategic vision.



Certificate of completion

Distinguish yourself with a certificate from MAICOE, an HRD Corp Registered Training Provider, delivered by Accredited Trainers and recognised for industry-relevant, future-focused executive education.



Accredited Trainers



Professor Ts. Dr. Rayner Alfred is an HRD Corp Accredited Trainer and globally recognised AI expert (World's Top 2% Scientist) specialising in applied artificial intelligence, data analytics, and intelligent decision-support systems. With extensive experience leading high-impact research, executive programmes, and international industry collaborations, he focuses on translating AI capabilities into actionable enterprise strategies.

As Lead Trainer for Strategic AI Leadership: From Vision to Execution, Prof. Rayner equips senior leaders with the strategic frameworks, governance models, and execution roadmaps required to move AI from ambition to measurable business outcomes. His expertise in AI governance, risk management, and responsible innovation enables organisations to align AI initiatives with corporate strategy, regulatory requirements, and sustainable value creation.



Ts. Dr. Rayner Pailus is a Professional Technologist and experienced academic specializing in data analytics, information systems, and digital transformation. He has led numerous applied research and industry initiatives focused on harnessing AI and emerging technologies to strengthen organizational strategy, governance, and performance.

As Co-Lead Trainer for Strategic AI Leadership: From Vision to Execution, Ts. Dr. Rayner Pailus brings practical expertise in translating AI strategy into structured implementation frameworks. He supports senior leaders in aligning AI initiatives with regulatory requirements, operational realities, and risk management principles. Through executive training and advisory engagements, he equips organisations with clear roadmaps to execute AI transformation responsibly, effectively, and with measurable strategic impact.



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MAICOE Advantages

- ✓ **Practical, Industry-Driven Learning:** Programmes designed with real-world case studies and applied implementation frameworks.
- ✓ **Executive-Focused Professional Development:** Specialised training for senior leaders to drive transformation and measurable outcomes.
- ✓ **HRD Corp Registered Training Provider:** Recognised for delivering claimable, high-impact workforce development programmes.
- ✓ **Accredited Trainers & Industry Experts:** Led by certified professionals with deep expertise in AI, strategic, risk, and governance.
- ✓ **Trusted Partner for Future Skills Upskilling:** Committed to empowering organisations with AI-ready talent and strategic capabilities.
- ✓ **Verified Digital Certificates:** Upon completion of the program, participants will be awarded a verified digital certificate of participation by Malaysia AI Centre of Excellence training program.



- ✓ **Program Details:** 21 Hours (3-days)
- ✓ **Program Fee:** RM6,750.00



+6010-948-9696 / +6012-438-9838



<https://maicoe.org/training-and-certifications>