

ARTIFICIAL INTELLIGENCE (AI) FOR AUTONOMOUS SYSTEMS

"Harness AI to Power Smart and Autonomous Systems"

Schedule

Date	Venue	Fees (Face-to-Face)
18 - 22 May 2026	Dubai, UAE	USD 3495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

Artificial Intelligence (AI) is revolutionizing the development of autonomous systems across industries, enabling smarter decision-making, enhanced efficiency, and adaptive performance. This intensive 5-day training provides participants with a comprehensive understanding of AI principles, algorithms, and practical applications in autonomous systems, including robotics, self-driving vehicles, and industrial automation.

The course emphasizes the integration of AI techniques such as machine learning, computer vision, and sensor fusion into autonomous platforms. Participants will engage in hands-on exercises, case studies, and system simulations to gain the skills needed to design, implement, and optimize AI-driven autonomous systems effectively and safely.

Objectives

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

- Understand the fundamentals of AI and its role in autonomous systems
- Apply machine learning, computer vision, and data analytics in autonomous platforms
- Design and implement AI-driven decision-making processes
- Integrate sensors, perception, and control systems for autonomy
- Develop safe, reliable, and adaptive autonomous solutions
- Evaluate system performance and optimize AI models for real-world applications

Why Attend

- Gain hands-on expertise in AI applications for autonomous systems
- Learn to integrate AI with sensors, perception, and control technologies
- Enhance problem-solving and decision-making capabilities in autonomous platforms
- Reduce development risks and improve system performance
- Strengthen career prospects in AI, robotics, and automation

Target Audience

This program is designed for:

- AI engineers and software developers
- Robotics and automation professionals
- Systems engineers and designers of autonomous platforms
- IoT specialists integrating AI into smart systems
- Technical managers and R&D professionals in AI and autonomous technologies

Individual Benefits

Key competencies that will be developed include:

- Knowledge of AI algorithms and autonomous system design
- Skills in machine learning, computer vision, and sensor fusion
- Competence in building adaptive and intelligent autonomous solutions
- Ability to optimize AI models for real-time decision-making
- Practical experience through case studies, simulations, and workshops
- Enhanced professional credibility in AI and autonomous technologies

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved design and performance of autonomous systems
- Reduced development risks and operational failures
- Enhanced integration of AI with IoT and automation platforms
- More efficient and adaptive decision-making processes
- Accelerated innovation and competitive advantage
- Strengthened organizational expertise in emerging technologies

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Fundamentals of AI, machine learning, and autonomous systems
- Case Studies – Real-world AI applications in autonomous platforms
- Workshops – Hands-on exercises in AI algorithms, perception, and control integration
- Peer Exchange – Group discussions on challenges and lessons learned
- Tools – AI frameworks, simulation platforms, sensor integration templates, and code samples

MAWA EVENTS

Address: No. 857, Block A2, Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net



Course Outline

Detailed 5-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM Daily Format: 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Introduction to AI and Autonomous Systems

Module 1: Fundamentals of AI for Autonomy (07:30 – 09:30)

- Overview of AI, autonomy, and intelligent systems
- Key components of autonomous platforms

Module 2: Machine Learning Principles (09:45 – 11:15)

- Supervised, unsupervised, and reinforcement learning
- AI model selection and evaluation

Module 3: Autonomous System Architectures (11:30 – 01:00)

- System components, sensors, and control loops
- Integration considerations for AI-enabled systems

Day 2: Sensor Fusion and Perception

Module 4: Sensor Technologies and Data Acquisition (07:30 – 09:30)

- Types of sensors for autonomous systems
- Data collection and preprocessing

Module 5: Sensor Fusion and Perception Algorithms (09:45 – 11:15)

- Combining sensor data for accurate perception
- Object detection, tracking, and localization

Module 6: Workshop: Implementing Sensor Fusion (11:30 – 01:00)

- Hands-on exercises with simulated sensor data
- Fusion techniques for real-time decision-making

Day 3: AI Decision-Making and Control

Module 7: Decision-Making Algorithms (07:30 – 09:30)

- Path planning, obstacle avoidance, and motion control
- Reinforcement learning for autonomous decisions

Module 8: Control Systems Integration (09:45 – 11:15)

- Feedback loops and adaptive control
- Safety and reliability considerations

Module 9: Workshop: AI-Based Control Simulation (11:30 – 01:00)

- Simulated autonomous scenarios
- Optimizing AI-driven decision-making

Day 4: Advanced AI Techniques

Module 10: Computer Vision and Image Processing (07:30 – 09:30)

- Object recognition, tracking, and environment mapping
- Integration with autonomous navigation systems

Module 11: AI Optimization and Model Tuning (09:45 – 11:15)

- Performance metrics, hyperparameter tuning
- Real-time AI system optimization

Module 12: Case Study and Peer Discussion (11:30 – 01:00)

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Analysis of AI-driven autonomous system projects

- Lessons learned and best practices

Day 5: Implementation, Evaluation, and Future Trends

Module 13: Autonomous System Implementation (07:30 – 09:30)

- Deployment strategies and lifecycle considerations
- Integration with IoT and other emerging technologies

Module 14: System Evaluation and Performance Metrics (09:45 – 11:15)

- Monitoring, validation, and safety assessment

Module 15: Future Trends and Action Planning (11:30 – 01:00)

- Emerging AI technologies for autonomous systems
- Action plan for applying AI in real-world projects

Certification

Participants will receive a Certificate of Completion in Artificial Intelligence (AI) for Autonomous Systems, validating their expertise in designing, implementing, and optimizing AI-driven autonomous solutions for real-world applications.

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TEL:
+601116373203

EMAIL:
info@mawaevents.net

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