

ADVANCED AI-IOT PROFESSIONAL

Course Overview

Explores the transformative impact of integrating Artificial Intelligence (AI) with the Internet of Things (IoT). Discover how AI enhances IoT by enabling intelligent automation, predictive analytics, and real-time decision-making. Covering AI models, edge computing, IoT architectures, and real-world applications, Advanced AI-IOT Professional (AI-IOT) aims to equip participants with the skills to develop intelligent, connected systems for industries like smart cities, healthcare, and automation. Learn how AI-IoT drives innovation across healthcare, smart cities, and industrial automation industries.

Certification & Exam

Pass the 1-hour exam consisting of online Multiple Choice questions & score a minimum of 70% to earn the certificate of competency upon completing the course

Duration

24 Hours/ 3-Days

Pre-requisite

No pre-requisite. Suitable for everyone with and without prior technology experience.

Course Benefits

- Gain in-depth knowledge of AI-driven IoT systems, edge computing & automation
- Connect with AI-IoT professionals & industry leaders
- Earn a recognized credential from CASUGOL
- Work on real-world projects and case studies
- Job opportunities in the Digital Economy
- Increase earning potential
- Career advancement
- Industry-relevant skills

Who Should Attend

AI Engineers, IoT Developers, Data Scientists, Machine Learning Engineers, Software Engineers, Embedded System Engineers, Cloud Architects, Network Engineers, Cybersecurity Professionals, Automation Engineers, Edge Computing Specialists, IT Managers and Directors, CTOs and CIOs, Digital Transformation Leaders, Business Analysts, Research Scientists, Academic and Educators, Product Managers (AI-IoT Solutions), Innovation and R&D Professionals, Startup Founders and Entrepreneurs, and anyone interested in AI-IoT.

**REGISTER
NOW**



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COURSE OUTLINE

Module 1 – Introduction to IoT and AI-driven IoT

- What is the Internet of Things (IoT)?
- The Convergence of IoT and Artificial Intelligence (AI)
- Enhancing the capabilities of IoT using AI
- IoT Ecosystem and Market Trends
- Growth Trends and the Adoption of AI-driven IoT Solutions
- AI-IoT and its Applications Across Industries

Module 2 – IoT Architecture and Components

- Introduction to IoT Architecture Layers (Perception, Network, Application, AI Integration)
- Hardware Components in AI-driven IoT systems (Sensors, Actuators, Microcontrollers, AI-powered Embedded Systems)
- AI-driven IoT Architecture and Workflow
- Edge AI vs. Cloud AI
- AI Algorithms for IoT (Machine Learning, Computer Vision & NLP applications in IoT)

Module 3 – IoT Networking and Connectivity`

- IoT Wireless Communication Technologies (Wi-Fi, Bluetooth, LPWAN, 5G)
- Cloud and Edge Computing for AI-Enabled IoT
- AI-Powered IoT Network Security (Intrusion Detection, Anomaly Detection, AI-enhanced Encryption techniques)
- Hands-on: Setting up IoT Network Connectivity

Module 4 – IoT Data Processing and Analytics using Phyton

- Introduction to IoT Data Processing
- Phyton Libraries for Data Collection and Data Preprocessing Techniques (pandas, numpy, requests, paho-mqtt)
- IoT Data Storage and Handling using Python pandas and sqlite3
- IoT Data Visualization and Analysis

COURSE OUTLINE

Module 5 – IoT Security and Privacy

- IoT Security Challenges and Threats
- Encryption, Authentication, Secure Communication
- Overview of AI and Data Governance for IoT
- Compliance and Regulatory Frameworks
- Hands-on: Implementing Security in IoT Applications

Module 6 – IoT Development & Prototyping

- IoT Device Programming (Arduino, Raspberry Pi, ESP32)
- Integration with Cloud Platforms (AWS IoT, Google Cloud IoT, Azure IoT)
- Hands-on: Implementing Security in IoT Applications

Module 7 – AI and IoT Convergence

- Predictive Analytics with Machine Learning using Python scikit-learn
- Building Predictive Models to Forecast IoT Data Trends
- Time-series Forecasting using Arima, LSTM (Long Short-Term Memory) Networks with TensorFlow/Keras
- Deep Learning for Image and Video Analytics using OpenCV and TensorFlow

Module 8 – Industry-specific IoT Applications

- Smart Cities and Infrastructure
- Industrial IoT (IIoT) and Manufacturing
- IoT in Healthcare and Agriculture

Endorsed by:

CASUGOL

This module has been validated and endorsed by CASUGOL, assuring the highest standard of curriculum quality, relevance, and global alignment. Upon completion, participants will be eligible for an internationally recognized CASUGOL certificate.