# SPYPRO SECURITY SOLUTIONS Pvt. Ltd.,
## C Y B E R S E C U R I T Y

## 3-Days Workshop on IoT INTEGRATED WITH AI

## Workshop Overview:

In today's connected digital ecosystem, the integration of Internet of Things (IoT) with Artificial Intelligence (AI) is revolutionizing how data is collected, analyzed, and used for intelligent decision-making. From smart homes and healthcare to industrial automation and smart cities, AI-powered IoT software solutions play a crucial role.This three-day comprehensive workshop is designed to provide participants with strong foundational knowledge and hands-on experience in building software-based IoT solutions integrated with AI, focusing on real-world use cases, cloud platforms, and machine learning techniques.

## Day 1: Foundations of IoT and AI

### Session 1:
 - Welcome and workshop introduction
 - Overview of Internet of Things (IoT)
 - IoT architecture: devices, gateways, cloud, and applications
 - Real-world IoT applications

### Session 2:
 - Introduction to Artificial Intelligence and Machine Learning
 - Difference between AI, ML, and Deep Learning
 - Why integrate AI with IoT (AIoT)
 - Use cases of AIoT in industry

### Session 3:
 - Overview of software tools for IoT & AI
 - Introduction to Python for IoT data handling
 - Understanding IoT data formats (JSON, CSV)
 - **Hands-on exercise:** Simulating IoT sensor data using Python

# Day 2: IoT Software Development & Cloud Integration

### Session 1:
- IoT communication protocols (HTTP, MQTT)
- REST APIs and data transmission
- Real-time vs batch data processing

### Session 2:
- Cloud platforms for IoT (AWS / Azure / Firebase – overview)
- Storing and managing IoT data in the cloud
- Data visualization and dashboards

### Session 3:
- **Hands-on exercise:** Creating a virtual IoT device using Python
- Sending live sensor data to the cloud using MQTT
- Visualizing IoT data on a dashboard

# Day 3: AI for IoT Data & Intelligent Applications

### Session 1:
- Understanding IoT datasets
- Data preprocessing and feature extraction
- Introduction to Machine Learning models for IoT

### Session 2:
- Predictive analytics and anomaly detection
- AI-based decision making for IoT systems
- Edge AI vs Cloud AI (conceptual understanding)

### Session 3:
- **Hands-on exercise:** Building an AI model for IoT data prediction
- Smart alert generation based on AI output
- Mini project demonstration

In conclusion, a three-day workshop on IoT Integrated with AI provides participants with essential knowledge and practical skills to design, develop, and deploy intelligent IoT applications. Through a balanced mix of theoretical concepts and hands-on sessions, participants gain real-world exposure to AI-driven data analysis, cloud-based IoT platforms, and smart automation. This workshop helps build strong technical foundations, enhances career readiness, and prepares participants to contribute effectively to the rapidly growing field of AI-powered IoT solutions.

## Spypro Security Solutions Pvt. Ltd.,

Cyber Security  |  Machine Learning  |  Projects & Training

**Phone** : +91 818 288 1234
**Phone** : +91 818 289 1234
**Landline** : 0866 461 7587
**Email:** info@spyprosecuritysolutions.com

**Address:** 100 Feet road backside, Madhapur,
Hyderabad, Telanagana,500081

https://spyprosecuritysolutions.com/