AI-Powered Solutions for Industry Operations

Duration: 05 days (40 hours)

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- **Outcome:** Discover how ML is used to enhance day-to-day operations across industries.
- 4.1 Predictive Maintenance for Equipment Reliability
- 4.2 Safety Management Using Computer Vision
- 4.3 Sentiment Analysis for Customer and Stakeholder Feedback
- 4.4 Resource Allocation and Demand Forecasting

Module 5: Advanced Concepts in Industry AI

- **Outcome:** Explore cutting-edge ML applications and their relevance to business operations.
- 5.1 Leveraging IoT and Edge Computing for Real-Time Analytics
- 5.2 Computer Vision Applications (e.g., Hazard Detection, Monitoring)
- 5.3 NLP for Automating Reports and Insights Generation
- 5.4 Integrating Geospatial Data into ML Models

Module 6: Hands-On Labs

- **Outcome:** Apply learned concepts to practical scenarios using real-world datasets.
- 6.1 Lab 1: Predict Equipment Failures with Maintenance Logs
- 6.2 Lab 2: Identify Safety Hazards with Image Data
- 6.3 Lab 3: Sentiment Analysis of Customer Feedback
- 6.4 Lab 4: Optimize Operations with Time-Series Forecasting

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Module 7: Deployment and Operationalization of ML Models

- **Outcome:** Learn how to take ML models from development to deployment in production environments.
- 7.1 Model Deployment Options (Cloud, Edge, and Hybrid)
- 7.2 Monitoring Model Performance and Ensuring Reliability
- 7.3 Retraining and Updating Models for Continuous Improvement

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Module 8: Ethical and Responsible AI Practices

- **Outcome:** Understand the ethical implications and responsibilities of deploying AI solutions.
- 8.1 Bias Mitigation in ML Models
- 8.2 Ensuring Privacy and Security Compliance

- 8.3 Addressing Environmental Impact and Sustainability

Module 9: Future Trends and Case Studies

- **Outcome:** Stay ahead by exploring the latest AI advancements and real-world applications.
- 9.1 Autonomous Operations with AI
- 9.2 AI-Driven Sustainability Initiatives
- 9.3 Case Studies of Successful AI Deployments

Module 10: Capstone Project

- **Outcome:** Demonstrate end-to-end problem-solving skills in an industry-relevant ML challenge.
- 10.1 Define the Business Problem and Collect Relevant Data
- 10.2 Build, Deploy, and Present a Working ML Solution
- 10.3 Discuss Lessons Learned and Business Impact