

AI Learning Platform - Lesson Plan Overview

1. Smart Document Bot

This project introduces students to the fundamentals of Natural Language Processing (NLP) and Robotic Process Automation (RPA). Students will build an AI-powered bot to extract, interpret, and automate document workflows.

Skills Learned:

- Text preprocessing and OCR
- NLP techniques for information extraction
- Integrating AI with RPA tools like UiPath
- API creation for document workflows

2. Claims Triage AI

Students will develop a claims triage system to classify and route insurance claims using machine learning. The project emphasizes model training, evaluation, and pipeline automation.

Skills Learned:

- Supervised ML algorithms for classification
- Feature engineering and data wrangling
- Model evaluation metrics
- Workflow automation with real-world use cases

3. MindTrace

This module focuses on conversational AI and mental health applications using large language models.

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Students will learn to design and build user-facing AI systems with context awareness.

Skills Learned:

- Prompt engineering and fine-tuning LLMs
- Building vector-based memory with embeddings
- User experience design and ethical AI
- FastAPI integration for app deployment

4. Neurodegenerative Disease Detection

This advanced project applies multimodal machine learning to healthcare. Students will develop systems that detect Parkinson's or Alzheimer's using facial, speech, and motor data.

Skills Learned:

- Multimodal data integration
- Time-series and audio data analysis
- Deep learning architectures (CNN, RNN)
- Healthcare AI considerations and deployment

Comprehensive Coverage for AI Architects

Together, these four projects offer a comprehensive path to mastering AI system design, development, and deployment. Learners will gain hands-on experience in:

- Core machine learning techniques
- Natural language processing and conversational AI

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- Robotic process automation and API integration
- Deep learning for computer vision and audio
- Real-world deployment pipelines and MLOps

These projects collectively provide the foundation, specialization, and applied knowledge necessary to be successful as an AI Architect.