

# Hands-on Generative AI with LlamaIndex, LangChain and Python

## **Version Control Systems : 6 hours**

- Introduction to Git
  - GitHub Basics
  - Branching and Merging
  - Pull Requests
  - Virtual Environment
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## **Data Handling and Colab Introduction : 6 hours**

- Overview of Google Colab
  - Data Import/Export
  - Data Cleaning and Manipulation
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## **Python for Generative AI : 6 hours**

- Basics of Generative AI
- Python Libraries for Generative AI

## **Example Projects**

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## **Tools and Model Building : 6 hours**

- Flask
  - FastAPI
  - API testing with POSTMAN
  - Streamlit ( first frontend app )
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## **Machine Learning Applications & Landscape : 6 hours**

- Overview of ML Applications
  - Industry Use Cases
  - Trends in ML
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## **Building end-to-end Machine Learning Project : 6 hours**

- Problem Definition
  - Data Collection
  - Model Building
  - Evaluation
  - Deployment
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## **How does a Machine Learn? : 6 hours**

- Introduction to ML Concepts
  - Supervised vs Unsupervised Learning
  - Training and Testing
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## **Introduction to Natural Language Processing : 6 hours**

- Basics of NLP
  - Text Processing
  - Sentiment Analysis
  - NLP Libraries
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## **Word Embeddings, OpenAI API, Vector DB : 6 hours**

- Word Embeddings
  - Using OpenAI API
  - Introduction to Vector Databases
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## LangChain, LlamaIndex : 6 hours

- Overview of LangChain
  - Using LlamaIndex for NLP Tasks
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## Stable Diffusion : 6 hours

- Introduction to Stable Diffusion
  - Use Cases
  - Implementation Examples
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## Use of Common AI Tools for Automating Daily Tasks : 6 hours

- Overview of AI Tools
  - Automation Examples
  - Practical Applications
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## Gen AI with APIs : 6 hours

- Generative AI with APIs
  - Integrating APIs in Projects
  - Example Projects
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## Miscellaneous : 6 hours

- Additional Topics
  - Resources for Further Learning
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## Major Project - Student Individual

- End-to-End Project
- Evaluation