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# Workshop 1: Python Mastery for Data Analysis and Automation

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| --- | --- |
| **Duration** | **2 Days** |
| **Topics** |  |
|  | - Python Basics & OOP Concepts |
|  | - Python Modules: |
|  | - Web Scraping (Requests & BeautifulSoup) |
|  | - Regular Expressions, OS, Collections, String, Math, Random |
|  | - Data Analysis & Visualization: |
|  | - Numpy, Pandas, Matplotlib, Seaborn |

# Workshop 2: Advanced SQL and Machine Learning Fundamentals

|  |  |
| --- | --- |
| **Duration** | **3 Days** |
| **Topics** |  |
|  | - SQL Commands: Query Writing, Window Functions, Nested Queries, Joins |
|  | - Machine Learning with Scikit-learn: |
|  | - Supervised Learning: Regression, Classification Models |
|  | - Unsupervised Learning |

# Workshop 3: Deep Learning and Natural Language Processing

|  |  |
| --- | --- |
| **Duration** | **1 Week** |
| **Topics** |  |
|  | - Deep Learning with Neural Networks: |
|  | - Artificial Neural Network (ANN) |
|  | - Convolutional Neural Network (CNN) |
|  | - Recurrent Neural Network (RNN) |
|  | - Word Embeddings & Transformers: |
|  | - Word2Vec |
|  | - Transformers (Encode, Decode, Encode-Decode) |

# Workshop 4: Building Intelligent Applications with LLMs and LangChain

|  |  |
| --- | --- |
| **Duration** | **3 Days** |
| **Topics** |  |
|  | - Large Language Models (LLMs): Deployment, Prompt Engineering |
|  | - LangChain & Agents with CrewAI |

# Workshop 5: Web and Cloud Development for AI Applications

|  |  |
| --- | --- |
| **Duration** | **1 Week** |
| **Topics** |  |
|  | - Web Development: |
|  | - HTML, CSS (Front End) |
|  | - Flask, Streamlit (App Development) |
|  | - Cloud Deployment & Development: |
|  | - Cloud Platforms (AWS, Azure, GCP) |
|  | - Deployment Pipelines |