

Artificial Intelligence & Machine Learning

#CodingMtlbVMM

VMM
EDUCATION

Best Place to Learn Coding

Online & Offline Classes

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PYTHON FOR AI & DATA SCIENCE

- Quick Python refresher (data types, functions, file I/O)
- NumPy arrays & mathematical operations
- Pandas for structured data manipulation
- Matplotlib & Seaborn for visualization

DATA HANDLING, PREPROCESSING & EDA

- Handling missing values, duplicates, and outliers
- Encoding categorical variables, feature scaling
- Understanding correlation and feature importance

MACHINE LEARNING CORE

- Introduction to AI, ML, DL - key differences
- Supervised Learning: Linear Regression, Logistic Regression, DecisionTree, Random Forest, KNN
- Unsupervised Learning: K-Means Clustering, Dimensionality Reduction (PCA)
- Model evaluation metrics (Accuracy, Precision, Recall, F1)

NEURAL NETWORKS & DEEP LEARNING

- Artificial Neural Networks (ANNs) concepts and architecture
- Forward & backward propagation
- Building deep models with TensorFlow / Keras
- Regularization & dropout



COMPUTER VISION (AI IN IMAGES & VIDEO)

- Introduction to Computer Vision
- Image processing using OpenCV (filtering, edge detection)
- Convolutional Neural Networks (CNN) basics
- Face detection & object recognition

NATURAL LANGUAGE PROCESSING (AI IN TEXT)

Text cleaning
Bag of Words & TF-IDF representations
Sentiment analysis using scikit-learn, Intro to Word Embeddings

APPLIED ARTIFICIAL INTELLIGENCE

- What is Artificial Intelligence?
- AI Agents, Search, and Decision-Making
- Rule-based systems (concepts)
- Reinforcement Learning overview

GENERATIVE AI & MODEL DEPLOYMENT

- Introduction to Generative AI and LLMs
- Working with pre-trained models (Hugging Face Transformers)
- Text generation and summarization
- Image generation with DALL·E / Stable Diffusion API

