

# **Artificial Intelligence**

## **1. Natural Language Processing (NLP)**

- Text preprocessing
- Tokenization
- Stopwords removal
- Stemming & Lemmatization
- Bag of Words & TF-IDF
- Intro to chatbots

## **2. Computer Vision Basics**

- Image processing fundamentals
- Feature extraction
- Image classification basics
- Intro to OpenCV

## **3. Expert Systems**

- What are expert systems
- Components:
  - Knowledge base
  - Inference engine
- Applications in real world

## **4. Introduction to Deep Learning**

- Neural Networks basics
- Activation functions

- ANN, CNN (intro)
- Real-world use cases

## **5 . Reinforcement Learning (Basics)**

- Agent & environment
- Reward system
- Q-learning (basic idea)

## **6. AI Tools & Technologies**

- Python for AI
- Libraries:
  - NumPy, Pandas
  - Scikit-learn
  - TensorFlow / Keras (intro)
- Jupyter Notebook / Google Colab

## **7. Ethics in AI**

- Bias in AI
- Fairness & transparency
- Privacy concerns
- Responsible AI