INTRODUCTION TO MACHINE LEARNING

AGENDA

- Introduction to ML
- What can we do using Machine Learning
- Common ML Libraries
- Pytorch vs Tensorflow

WHAT IS MACHINE LEARNING?

MACHINE LEARNING

- Machine learning is a subset of artificial intelligence. It’s a branch of AI that focuses on creating systems that can learn from data and improve their performance over time
- It enables systems to learn from data without explicit programming.
- Common applications include image recognition and natural language processing
- Machine learning algorithms can be categorized into supervised, unsupervised, and reinforcement learning.

APPLICATIONS OF MACHINE LEARNING

WHAT CAN WE DO USING MACHINE LEARNING?

- Give your homemade robot a brain — make it recognize faces or learn to walk!
- Unlock hidden patterns in your company’s user logs, financial reports, and sensor data.
- Segment customers to design smarter, personalized marketing strategies.
- Recommend products to users by learning from similar customer behavior.
- Detect potentially fraudulent transactions automatically.
- Forecast sales, revenue, or demand with data-driven predictions.
- Automate and optimize real-world decisions using intelligent algorithms.

COMMON ML LIBRARIES

COMMON MACHINE LEARNING LIBRARIES

• Let’s look at the most popular tools used in Machine Learning today.

•Here are the libraries you will use as a Data Scientist/ML Engineer:

- Scikit-Learn – Best for beginners and is used for regression/classification/clustering. Includes ready to use algos
- TensorFlow – Built by Google for large scale ML
- Keras – Contains high level APIs for deep learning. Comes built in with tensorflow
- PyTorch – Developed by Facebook
- Pandas / NumPy (for data handling) – Coz before ML you need clean data

•If you are just starting out with deep learning, Keras is your best bet

PYTORCH VS TENSORFLOW

PYTORCH VS TENSORFLOW

Scenario	Recommendation
You're just starting out	Keras (with TensorFlow)
You want control for custom models	PyTorch
You’re working in a research lab	PyTorch
You want to deploy to mobile/web	TensorFlow

THANK YOU