Session 1: Introduction to AI, ML & Project Overview

Welcome to the internship journey! Today we begin building your foundations for Audio AI.

What is Artificial Intelligence?

- Machines performing tasks that require human-like intelligence.
- Examples: Siri, Alexa, Google Maps, Self-driving cars, Face detection.

Why AI Matters Today

- Automates tasks
- Enhances decisions
- Improves search/recommendations
- Powers chatbots, assistants, analytics

What is Machine Learning?

- ML allows systems to learn from data instead of rules.
- Examples: spam filtering, movie recommendations, fraud detection.

How Machine Learning Works

- Input Data   Learn Patterns   Output Predictions
- More data = better learning
- Uses training, testing, validation.

Deep Learning Overview

- Advanced ML using neural networks.
- Handles audio, images, text.
- Whisper, GPT, and vision models use DL.

Neural Networks Explained Simply

- Network of 'neurons' that process information.
- Each layer extracts deeper features.
- Useful for speech & language tasks.

Real Examples of Audio AI

- Podcast chapter generation
- Meeting transcription (Zoom)
- Voice assistants
- Music recommendation systems

Your Internship Project

You will build:
1. Podcast transcription system
2. Topic segmentation engine
3. Topic summarization module
4. Final Streamlit dashboard

Final Project Pipeline

1. Audio Preprocessing
2. Whisper ASR Transcription
3. NLP Embeddings
4. Topic Segmentation
5. Summaries & Titles
6. Streamlit App UI

End of Session 1

Congratulations! In Session 2, we dive into ML types and start Python coding.