

AI+ Prompt Engineer Level 1

Module-1

Hands-on-2

Title: Build Your Own Mini Voice Assistant with Machine Learning

Problem Statement:

Participants will train a simple machine learning model to classify basic voice commands, such as "Play Music" or "Turn off the Lights," using Natural Language Processing (NLP). This exercise will demonstrate how machines can learn to recognize patterns in voice commands and how machine learning algorithms can be applied to real-time data, debunking the myth that AI simply "understands" language.

Steps to be followed:

1. Use a free online tool, such as **Teachable Machine** by Google.
 2. Select **Audio Project** to start the voice command recognition project.
 3. Record 2–3 simple voice commands (e.g., "Hello", "Music On", "Lights Off").
 4. Label each recorded voice command.
 5. Train the model in real-time (under a minute).
 6. Test the trained model by speaking the commands to see if it classifies them correctly.
 7. Explain how the model works under the hood (pattern recognition, the role of training data, etc.).
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Steps in Detailed Manner:

1. **Access Teachable Machine:**
 - Open the website: [Teachable Machine](#).
 - Choose the **Audio Project** option to create a new project that can classify voice commands.
2. **Record Voice Commands:**
 - Use a microphone to record 2-3 different simple voice commands, such as:
 - "Hello"
 - "Music On"
 - "Lights Off"
 - Make sure to clearly enunciate each command while recording.
3. **Label the Recorded Commands:**
 - Assign labels to the recorded commands, such as "Greet" for "Hello," "Play Music" for "Music On," and "Turn Off Lights" for "Lights Off."
4. **Train the Model:**

- After labeling the data, click the **Train** button to allow Teachable Machine to process the recordings and create a machine learning model based on the voice commands.
- The training process will take less than a minute.
- 5. **Test the Model:**
 - Once the model is trained, click on the **Webcam/Recording** button to test the model by speaking one of the commands.
 - Observe whether the model correctly classifies the command (e.g., if you say "Music On," it should recognize it as "Play Music").
- 6. **Explain the Process:**
 - Briefly explain that the model works by recognizing patterns in the recorded voice commands. It does not understand language but looks for patterns in the sound features (like pitch, frequency, etc.).
 - Discuss how the model's **training data** (the voice recordings) are used to **teach** the system to recognize these patterns and how it **classifies** new, unseen data.

Outcome:

- **Hands-on Learning:** Participants will understand that AI and machine learning are not about "understanding" language but about recognizing patterns. The model does not comprehend the meaning of the commands but rather identifies similarities in the audio features of the commands.
- **Real-Time Machine Learning:** The activity will provide a real-time experience of how machine learning models are trained and how they classify input data.
- **Understanding NLP Basics:** Learners will gain insight into how Natural Language Processing (NLP) can be applied to recognize and classify voice commands.
- **Debunking AI Myths:** The exercise will reinforce the idea that machine learning is driven by math and data, not magic.