

## Lesson 2: Prompt Engineering Basics

### Objective:

This lesson will guide you through the process of writing effective prompts to maximize the quality of responses from AI models.

### Key Concepts:

- **Prompt Engineering:** The process of designing inputs that guide the AI to generate the desired output. A well-crafted prompt results in better responses, whether it's for text generation, question answering, or other tasks.
- **Specificity vs. Generality:** More specific prompts tend to yield better results.
- **Open-ended vs. Closed-ended Prompts:** Open-ended prompts allow the AI to provide more expansive responses, while closed-ended prompts are more direct.
- **Contextual Prompts:** Providing adequate background information in the prompt can greatly improve the response.

### Application:

#### 1. Crafting Specific Prompts:

- Instead of vague questions like "Tell me about AI," ask more specific questions like "What are the main differences between supervised and unsupervised learning?"

#### 2. Iterative Refinement:

- Test different phrasings of the same prompt to see which yields the best results.
- Adjust the tone, length, and specificity to tailor the output to your needs.

#### 3. Using Instructions to Guide Output:

- Give clear instructions in the prompt. For instance, "Explain in simple terms" or "Provide an in-depth technical answer."

### Example Prompts:

- **Vague:** "Tell me about artificial intelligence."
- **Better:** "Can you explain the types of machine learning used in artificial intelligence with examples?"