Summer Training TR-103 Prompt Engineering

Day 1 Report

30th June, 2025

The first day of the training focused on introducing the world of "Prompt Engineering" and its significance. Various types of prompts were explored, along with practical tasks designed to help participants learn how to craft prompts with clarity, specificity, and effectiveness and to implement each type appropriately.

Introduction to Prompt Engineering

Prompt engineering is the art of writing inputs that guide AI models like ChatGPT to produce useful, accurate, and creative responses. Prompting is creative problem-solving.

- The ultimate goal of prompt engineering is to create effective inputs i.e. good prompts that result in better AI output, enabling seamless integration into tools and workflows.

Better prompts = Better outputs

- **Significance of Prompt Engineering:**
  - Get better results from AI
  - Save time and cost
  - Gain more control
  - Essential for AI-powered tools
- **Core Principles of Prompt Engineering:**
  1. **Clarity:** Ensuring prompts are straightforward and unambiguous to elicit precise responses.
  2. **Specificity:** Designing prompts with sufficient detail to guide AI models toward relevant and accurate outputs.

3. **Effectiveness:** Crafting prompts that achieve desired results efficiently, balancing response quality and processing time.

- **Real-World Use Cases:**
  1. **Education:** Summarize topics, generate quizzes.
  2. **Resume Writing:** Tailor resumes to jobs
  3. **E-Commerce:** Write product descriptions
  4. **Chatbots:** Create smart interactions
  5. **Research:** Brainstorm, analyze, write

Prompts

A prompt is a piece of input provided to an AI model to guide its response. It sets the context, instructions, or questions that the AI uses to generate relevant and accurate outputs.

Anatomy of a Good Prompt

A strong prompt is:

✓ **Clear:** easy to understand

✓ **Specific:** avoids vague words

✓ **Contextual:** includes background if needed

✓ **Goal-oriented:** states what you want

Types of Prompt Engineering

1. **Instructional Prompts:** Directly tell the AI what to do.

eg. "Summarize this article in 3 bullet points."

"Write a thank-you email to a new customer."

2. **Role-based Prompts:** Assign the Al a persona for better tone or expertise.

eg. "You are a career coach. Rewrite my resume summary."

"Act like a historian. Explain the French Revolution in simple terms."

3. **Few-shot Prompts:** Show 1-2 examples of the task and ask Al to continue.

eg. Q: Capital of France? A: Paris

Q: Capital of Japan? A: Tokyo

Q: Capital of Germany? A: ??

4. **Zero-shot Prompts:** Give the Al a task without examples.

eg. "Write a haiku about the ocean."

"Translate this to French."

5. **Chain-of-Thought(CoT) Prompts:** Ask the Al to reason step-by-step for better accuracy.

eg. "If a car travels 90 km in 3 hours, what is the speed? Think step by step."

6. **Constraint-based Prompts:** Add rules or limits to control the output.

eg. "Write a tweet about our summer sale. Use a fun tone and keep it under 15 words."

7. **Reframing Prompts:** Rewrite vague prompts for better results.

eg. X "Tell me about climate change."

✓ "Explain 3 major causes of climate change in under 100 words."

Prompt Writing Formula

[Instruction] + [Context] + [Format] + [Constraints] + [Role]

eg. "You are a marketing expert. Write 3 Instagram captions for a vegan skincare product. Make them fun and under 20 words."

Common Prompt Mistakes

- Too broad - "Write something about Al"
- Too vague - "Make this better"

- No context - "Summarize this" (but what is "this"?)
- Too long or confusing

Therefore, it is suggested to be specific, give structure and add purpose.

Pro Prompting Tips

- Use bullet points or numbered steps
- Assign roles (e.g., "You are a lawyer...")
- Use format examples for consistency
- Add constraints (length, tone, style)

Prompting as a Career Skill

- Al Product Designers
- Chatbot Developers
- Technical Writers
- Data Analysts
- UX Researchers

Conclusion

The first day of training provided a comprehensive introduction to the fundamentals of Prompt Engineering. Participants developed an understanding of how well-crafted prompts can significantly influence the performance and output of AI models. Key principles such as clarity, specificity, and effectiveness were emphasized through hands-on tasks and real-world examples, helping participants build a practical foundation in prompt design. Additionally, the session explored various types of prompts—including instructional, role-based, few-shot, and chain-of-thought—along with common mistakes and best practices. This knowledge equips participants to create more precise and purposeful AI interactions, laying the groundwork for leveraging prompt engineering as a valuable skill across diverse domains and careers.