

## Prompt Engineering Internship Portfolio

**Internship Title:** AI Research Intern

**Organization:** CodeJR

**Duration:** 18/02/24 to 18/04/24

**Focus Area:** Prompt Engineering for Generative AI Models

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### 1. Overview of Work

During my internship at CodeJR, I focused on understanding and experimenting with prompt engineering techniques to optimize responses from large language models like ChatGPT. Though this was an exploratory and self-driven role, I made consistent efforts to iterate on various prompt patterns, refine outputs, and understand how different prompt structures affect model behavior.

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### 2. Key Contributions

- Designed and tested over 50+ prompts targeting diverse use cases like:
    - Role-based prompting (e.g., “Act as a doctor, teacher, historian”)
    - Instructional prompting (e.g., “Explain how Dijkstra’s algorithm works”)
    - Chain-of-thought prompting (e.g., step-by-step reasoning problems)
    - Few-shot examples (e.g., providing multiple input-output samples)
  - Analyzed model behavior under different:
    - Temperature settings
    - System vs user prompts
    - Output lengths and response consistency
  - Documented learnings on how prompt tone and phrasing affect:
    - Creativity vs accuracy of outputs
    - Use of hallucinated data vs real facts
    - Ethical and responsible AI usage in generative systems
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### 3. Prompt Examples and Iterations

#### Prompt 1 - Role Prompting

Initial: “Explain how to cook biryani.”

Improved: “You are a professional Indian chef. Explain step-by-step how to cook traditional Hyderabadi biryani.”

#### Prompt 2 - Instructional Prompting

Initial: “Tell me about recursion.”

Improved: *“Explain recursion to a beginner using the example of factorial calculation, in less than 100 words.”*

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## 4. Tools and Platforms Used

- ChatGPT (Free and Plus)
  - Claude AI
  - Microsoft Copilot
  - Notion/Google Docs for documenting prompts and observations
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## 5. Outcomes

- Gained practical understanding of how LLMs respond to varied prompt techniques
  - Built a personal prompt library for technical, creative, and professional use cases
  - Improved analytical thinking about language model behavior
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## 6. My Analysis

### Objective:

To evaluate how different large language models (ChatGPT, Claude AI, and Microsoft Copilot) interpret and respond to the same prompts, thereby understanding their reasoning approach, tone adaptation, analogy selection, technical depth, and audience awareness.

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### Context:

I designed two prompts to test how AI models cater their responses based on audience complexity and instructional depth.

- **Prompt 1:** "Explain recursion" (target: general audience/beginners)
- **Prompt 2:** "Explain recursion to a second-year CS student" (target: intermediate, academic tone expected)

These prompts were tested across:

- **ChatGPT by OpenAI**
- **Claude AI by Anthropic**
- **Microsoft Copilot**

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### Key Comparative Metrics:

For both prompts, I analyzed the outputs based on:

- **Tone and Audience Adaptation**
  - **Analogies Used**
  - **Code/Example Inclusion**
  - **Technical Concepts Explained**
  - **Output Explanation Depth**
  - **Engagement/Clarity**
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### Findings Summary:

#### ✓ Prompt 1 - “Explain Recursion” (General Audience)

- **ChatGPT** used a **Matryoshka doll analogy** and Python factorial code to simplify recursion.
- **Claude** chose a **plate stack analogy**, slightly more abstract.
- **Copilot** opted for a **book stack** metaphor, maintaining beginner friendliness.

According to me:

All three provided valid, readable answers, but **ChatGPT** gave a more instructional breakdown, while **Claude** was brief, and **Copilot** balanced code with creativity.

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#### ✓ Prompt 2 - “Explain Recursion to a 2nd-Year CS Student”

- **ChatGPT** leaned into **technical control and memory management**, offering deeper recursion insights.
- **Claude** leaned **mathematical (Fibonacci)** and emphasized **call stack dynamics**.
- **Copilot** offered a highly **engaging real-world analogy (family dinner call chain)**, combining creativity with conceptual accuracy.

According to me:

**Copilot** stood out for tone adaptation and relatability. **ChatGPT** remained educational and grounded, while **Claude** favored abstraction and mathematical thinking.

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### Insight:

This exercise highlights how **prompt design affects model output**, and how **different AIs vary in tone, teaching style, and analogy use**, even with the same prompt. Such comparison is essential for anyone working in:

- Education Technology
- AI content design
- UX writing
- Prompt engineering

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### How This Adds Value to My Prompt Portfolio:

- Demonstrates an understanding of **prompt framing for different audiences**
- Shows ability to **evaluate AI reasoning behavior**
- Reflects **critical thinking** and communication design instincts
- Adds a unique lens on **model personality and style adaptation**

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**Note:** This document serves as a retrospective portfolio of my contributions and learnings.

## Certificate



### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Anushka Sharma** has successfully completed their internship with **Coding Jr (Code4Bots Technologies Pvt Ltd)** from **February 18, 2025** to **April 18, 2025**.

During this period, they worked as a **AI Research Intern**, contributing significantly to key projects and tasks related to their role. Their innovative approach, keen attention to detail, and ability to deliver high-quality work within deadlines were commendable.

**Anushka Sharma** 's dedication, ability to work independently, and strong collaboration skills made them an integral part of the team. Their enthusiasm for learning and continuous improvement was truly impressive.

We appreciate **Ms. Anushka Sharma** 's contributions and wish them continued success in all their future endeavors.

With regards,

A handwritten signature in blue ink, appearing to read "Sumit Bhat".

**Sumit Bhat**  
Founder  
Coding Jr  
(Code4Bots Pvt Ltd)



**Code4Bots Pvt Ltd**

**AIC-BHU 5th Floor**

**Phone: 9149553564**

**Inquiry: [ceo@codingjr.online](mailto:ceo@codingjr.online)**