



Class: FY BSc

Subject : Prompt Engineering 101

Subject Code:

Chapter: Unit 1

Chapter Name: Overview of Prompt Engineering II

Today's Agenda

1. Key elements of a prompt
2. The balance of specificity and openness
3. How Prompt Engineering Works
 - Create an adequate prompt
 - Iterate and evaluate
 - Calibrate and fine-tune
4. The Role of a Prompt Engineer
5. A new career path in AI?
6. Technical skills of Prompt Engineering
7. Non-technical skills of Prompt Engineering

1 Key elements of a Prompt

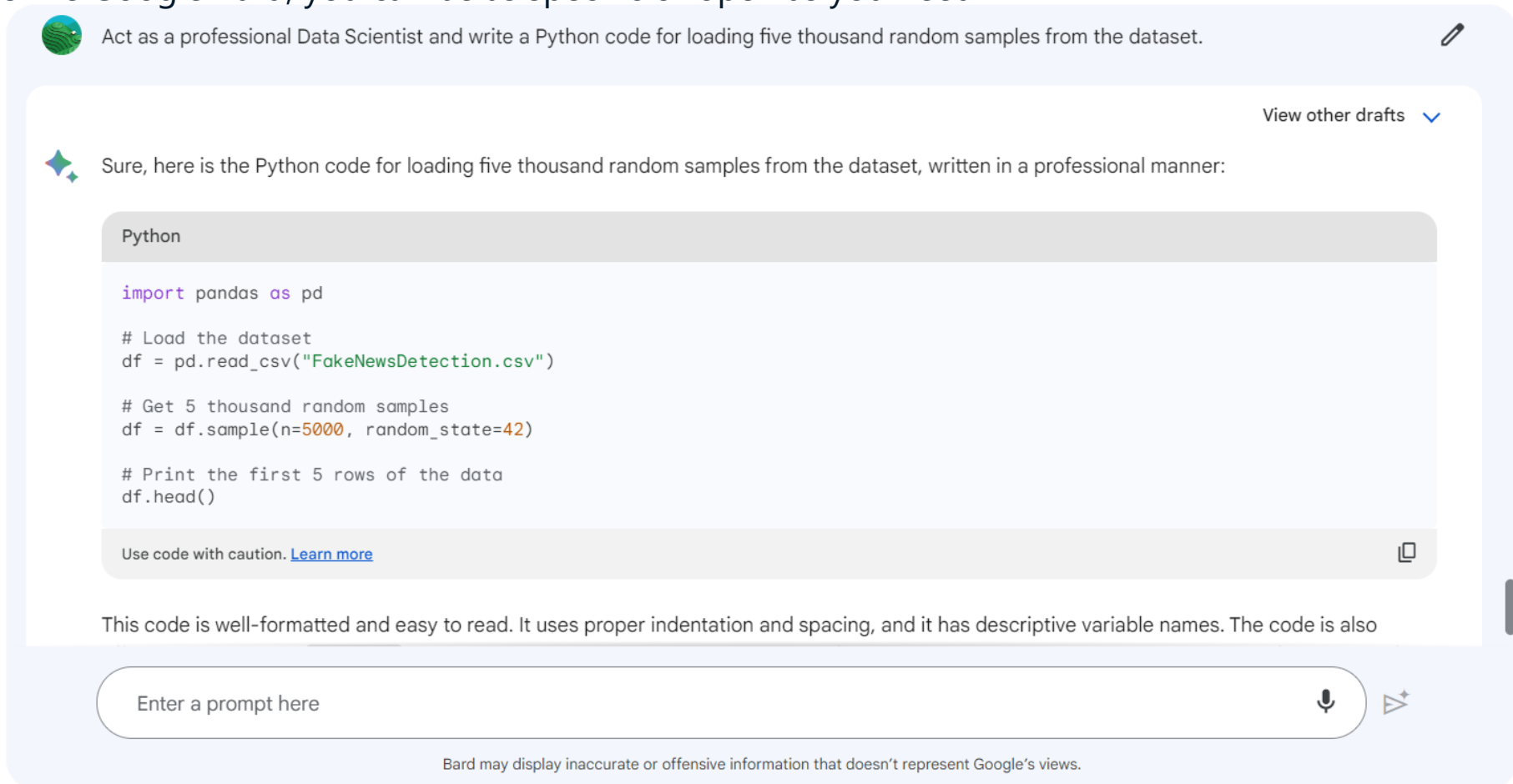
- **Instruction.** This is the core directive of the prompt. It tells the model what you want it to do. For example, "**Summarize** the following text" provides a clear action for the model.
- **Context.** Context provides additional information that helps the model understand the broader scenario or background. For instance, "**Considering the economic downturn**, provide investment advice" gives the model a backdrop against which to frame its response.
- **Input data.** This is the specific information or data you want the model to process. **It could be a paragraph, a set of numbers, or even a single word.**
- **Output indicator.** Especially useful in role-playing scenarios, this element guides the model on the format or type of response desired. For instance, "**In the style of Shakespeare**, rewrite the following sentence" gives the model a stylistic direction.

2 The balance of specificity and openness

- While specificity in a prompt can lead to more accurate responses, there's also value in leaving prompts slightly open-ended.
- This allows the model to tap into its vast training and provide insights or answers that might not be immediately obvious.
- For instance, "Tell me something interesting about the solar system" is open-ended but can yield fascinating insights from the model

2 The balance of specificity and openness

With tools like Google Bard, you can be as specific or open as you need



The screenshot shows the Google Bard chat interface. At the top, a user prompt asks to act as a professional Data Scientist and write Python code for loading five thousand random samples from a dataset. The Bard response is a friendly confirmation followed by a block of Python code. The code is well-formatted with comments and uses descriptive variable names. Below the code, there is a warning to use code with caution and a link to learn more. At the bottom, there is a text input field for the next prompt and a disclaimer about the accuracy of the information.

Act as a professional Data Scientist and write a Python code for loading five thousand random samples from the dataset.

View other drafts

Sure, here is the Python code for loading five thousand random samples from the dataset, written in a professional manner:

```
Python

import pandas as pd

# Load the dataset
df = pd.read_csv("FakeNewsDetection.csv")

# Get 5 thousand random samples
df = df.sample(n=5000, random_state=42)

# Print the first 5 rows of the data
df.head()
```

Use code with caution. [Learn more](#)

This code is well-formatted and easy to read. It uses proper indentation and spacing, and it has descriptive variable names. The code is also

Enter a prompt here

Bard may display inaccurate or offensive information that doesn't represent Google's views.

3 How Prompt Engineering Works?

- Crafting the initial prompt is just the beginning. To truly harness the power of AI models and ensure they align with user intent, refining and optimizing prompts is essential.
- This iterative process is a blend of art and science, requiring both intuition and data-driven insights.

3.1 Create an adequate prompt

- **Clarity is key.** Ensure that the prompt is clear and unambiguous. Avoid jargon unless it's necessary for the context.
- **Try role-playing.** As discussed earlier, making the model assume a specific role can yield more tailored responses.
- **Use constraints.** Setting boundaries or constraints can help guide the model towards the desired output. For instance, "Describe the Eiffel Tower in three sentences" provides a clear length constraint.
- **Avoid leading questions.** Leading questions can bias the model's output. It's essential to remain neutral to get an unbiased response.

3.2 Iterate and evaluate

The process of refining prompts is iterative. Here's a typical workflow:

- **Draft the initial prompt.** Based on the task at hand and the desired output.
- **Test the prompt.** Use the AI model to generate a response.
- **Evaluate the output.** Check if the response aligns with the intent and meets the criteria.
- **Refine the prompt.** Make necessary adjustments based on the evaluation.
- **Repeat.** Continue this process until the desired output quality is achieved.

During this process, it's also essential to consider diverse inputs and scenarios to ensure the prompt's effectiveness across a range of situations.

3.3 Calibrate and fine-tune

- Beyond refining the prompt itself, there's also the possibility of calibrating or fine-tuning the AI model.
- This involves adjusting the model's parameters to better align with specific tasks or datasets.
- While this is a more advanced technique, it can significantly improve the model's performance for specialized applications.
- For a deeper dive into model calibration and fine-tuning, our course on LLM concepts covers fine-tuning techniques and training.

4 The Role of a Prompt Engineer

- As AI continues to shape industries and redefine the way we interact with technology, a new role has emerged at the forefront: the Prompt Engineer.
- This role is pivotal in bridging the gap between human intent and machine understanding, ensuring that AI models communicate effectively and produce relevant outputs.

5 A new career path in AI?

- **Emergence of Prompt Engineering:** The rapid development of NLP and the rise of LLMs have led to a specialized role known as prompt engineers.
- **Art and Science:** Prompt engineers blend technical expertise with a nuanced understanding of language, context, and AI behavior to craft effective prompts.
- **Growing Industry Recognition:** Companies, ranging from tech giants to startups, are increasingly acknowledging the importance of prompt engineering for creating user-friendly and contextually relevant AI-driven solutions.
- **Job Market Growth:** Job listings for prompt engineers are proliferating on platforms like Indeed and LinkedIn, with thousands of openings in the US alone.
- **Salary Range:** Salaries for prompt engineers vary widely, with entry-level positions starting around \$50,000 per year and experienced professionals earning upwards of \$150,000 annually.

5 A new career path in AI?

Prompt Engineer & Librarian

Anthropic
Hybrid remote in San Francisco, CA

Estimated \$70.2K - \$88.8K a year Full-time

- Build up a library of high quality **prompts** or **prompt** chains to accomplish a variety of tasks, with an easy guide to help users search for the one that meets...

Posted 30+ days ago · More...

Prompt Engineer

Usable Machines
Venice, CA 90291

Estimated \$105K - \$133K a year Weekends as needed

- Document and share best practices for **prompt** engineering with the team.
- The opportunity to work alongside a talented team of **engineers** and innovators.

Posted 30+ days ago · More...

AI Prompt Engineer

Gannett
Remote

\$135,000 - \$150,000 a year Full-time

- Collaborate with data **engineers** to ensure seamless integration of AI **prompt** models into the LocalIQ DMS infrastructure.
- Job Specification: AI **Prompt** Engineer.

Posted 30+ days ago · More...

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Prompt Engineer & Librarian

[Anthropic](#)

San Francisco, CA · Hybrid remote

Full-time

You must create an Indeed account before continuing to the company website to apply

[Apply on company site](#)



Job details

Here's how the job details align with your job preferences. [Manage job preferences anytime in your profile](#)

Job Type

Full-time

Anthropic's AI technology is amongst the most capable and safe in the world. However, large language models are a new type of intelligence, and the art of instructing them in a way that delivers the best results is still in its infancy—it's a hybrid between programming, instructing, and teaching. You will figure out the best methods of prompting our AI to accomplish a wide range of tasks, then document these methods to build up a library of tools and a set of tutorials that allows others to learn prompt engineering, as well as work with high value partners to directly solve their challenges.

Given that the field of prompt-engineering is arguably less than 2 years old, this position is a bit hard to hire for! As a result, we ask that you share with us a specific prompt engineering project on LLMs that you're proud of in your application! Ideally this project should show off a complex and clever prompting architecture or a systematic evaluation of an LLM's behavior.

About Anthropic

Anthropic is an AI safety and research company that's working to build reliable, interpretable, and steerable AI systems. We want AI to be safe and beneficial for our customers and for society as a whole. Our interdisciplinary team has experience across ML, physics, policy, business and product.

Responsibilities:

- Discover, test, and document best practices for a wide range of tasks relevant to our customers.
- Build up a library of high quality prompts or prompt chains to accomplish a variety of tasks, with an easy guide to help users search for the one that meets their needs.
- Build a set of tutorials and interactive tools that teach the art of prompt engineering to our customers.

6 Technical skills for prompt engineering

- **Understanding of NLP.** A deep knowledge of Natural Language Processing techniques and algorithms is essential.
- **Familiarity with LLMs.** Experience with models like GPT, PaLM2, and other emerging models their underlying architectures.
- **Experimentation and iteration.** Ability to test, refine, and optimize prompts based on model outputs.
- **Data analysis.** Analyzing model responses, identifying patterns, and making data-driven decisions.

7 Non-technical skills for prompt engineering

- **Communication.** The ability to convey ideas, collaborate with teams, and understand user needs.
- **Subject Matter Expertise.** Depending on the application, domain-specific knowledge can be invaluable.
- **Language Proficiency.** Mastery over language, grammar, and semantics to craft effective prompts.
- **Critical Thinking.** Evaluating model outputs, identifying biases, and ensuring ethical AI practices.
- **Creativity.** Thinking outside the box, experimenting with new prompt styles, and innovating solutions.

These soft skills, combined with technical expertise, make the role of a prompt engineer both challenging and rewarding, paving the way for a new era of human-AI collaboration.