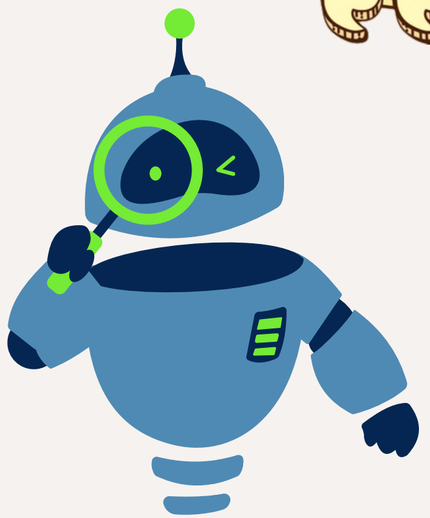
PROMPT ENGINEERING

GOOD PROMPTS BETTER RESULTS

Hey Nexus, have you noticed we're understanding humans better lately?"

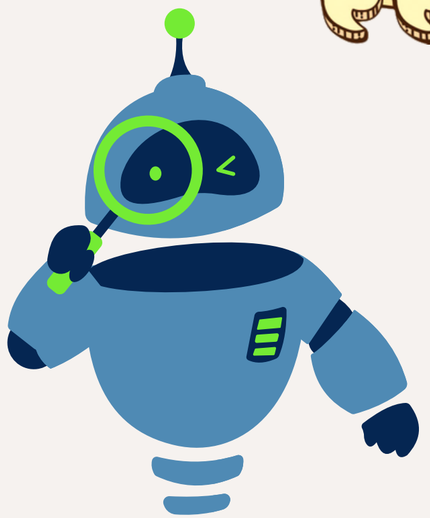
Hey Nexus, have you noticed we're understanding humans better lately?"

Yes, Nova What's the secret?



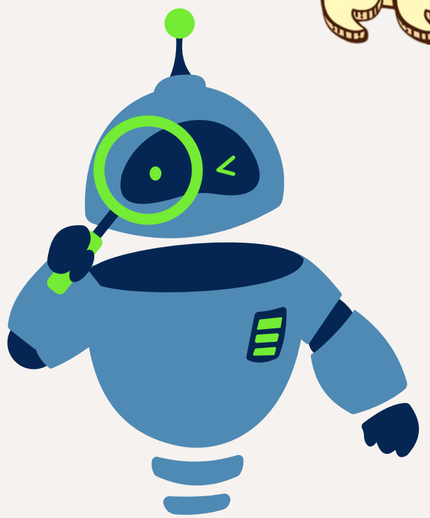
It's all due to '**Prompt Engineering**'. It's about giving us clear instructions to help us respond better.

So, clearer instructions mean better answers from us



Exactly, Nexus! And it makes our job easier and human-AI communication smoother.

Cool, Nova. Let's learn more about this 'Prompt Engineering'!



Introduction

Prompt Engineering

Prompt engineering is a rapidly evolving field within artificial intelligence (AI) and natural language processing (NLP) that focuses on designing and optimizing input prompts to effectively guide AI models, particularly large language models (LLMs), to produce desired outputs. As AI models like GPT-3, GPT-4, and others become more sophisticated, the ability to craft precise and effective prompts has become a critical skill for developers, researchers, and users.

Correct Prompts gives u Quality Answers !

PROMPT TECHNIQUES

Zero-Shot Prompting

Few-Shot Prompting

Chain-of-Thought (CoT) Prompting

Instruction-Based Prompting

Role-Playing Prompting

Iterative Refinement

Temperature/Sampling Control

Prompt Chaining

Negative Prompting

Contextual Prompting

Zero-Shot Prompting

Definition: The model is asked to perform a task without seeing any specific examples in the prompt.

Example:

Prompt: “What is the capital of France?”

Model Output: "Paris"

Few-Shot Prompting

Definition: The model is given a few examples in the prompt before it performs the task.

Example:

Prompt:

“Here are a few examples of capitals:

- Japan: Tokyo
- India: New Delhi

  What is the capital of France?”

  Model Output: "Paris"

Chain-of-Thought (CoT) Prompting

Definition: The model is guided to reason step by step before giving the final answer.

Example:

Prompt:

"If a train travels at 60 km/h for 2 hours, how far will it go?

First, think about how distance is calculated."

Model Output:

"Distance = Speed × Time

So, 60 km/h × 2 hours = 120 km.

The train will travel 120 kilometers."

Instruction-Based Prompting

Definition: The model is given explicit instructions on what to do in the prompt.

Example:

Prompt: "List three famous scientists and their major discoveries."

Model Output:

1. Albert Einstein – Theory of Relativity
2. Marie Curie – Radioactivity
3. Isaac Newton – Laws of Motion

Role-Playing Prompting

Definition: The model is instructed to take on a specific role in the prompt.

Example:

Prompt: “You are a customer service representative. How would you respond to a complaint about a late delivery?”

Model Output:

"I apologize for the delay. We understand your frustration, and we are working to get your package to you as soon as possible."

Iterative Refinement

Definition: The model's output is iteratively refined by providing additional feedback or asking the model to improve upon its previous answer.

Example:

Prompt 1: "Write a paragraph about climate change."

Model Output 1: "Climate change is a global issue that involves long-term changes in temperature and weather patterns."

Prompt 2: "Can you make it more detailed, especially about the causes?"

Model Output 2: "Climate change is a global issue primarily caused by human activities such as deforestation, burning fossil fuels, and industrial emissions. These activities release greenhouse gases, contributing to the warming of the planet."

Temperature/Sampling Control

Definition: The model's output can be controlled using parameters like temperature, which controls the randomness of the response.

Example:

Prompt: "Generate a creative story about space exploration."

Temperature=0.7: "In the distant future, astronauts discover a new planet that seems to be alive..."

Temperature=1.0: "The stars blinked. Then, something strange happened—the astronauts felt the planet's pulse..."

Prompt Chaining

Definition: A sequence of prompts where the output of one prompt is used as the input for the next.

Example:

Prompt 1: "Write a brief summary of the book '1984'."

Model Output 1: "1984 is a dystopian novel by George Orwell about a totalitarian regime."

Prompt 2: "Can you list the main themes from that summary?"

Model Output 2: "Main themes: surveillance, totalitarianism, individual freedom."

Negative Prompting

Definition: The model is instructed to avoid certain things in its response.

Example:

Prompt: “Describe a cat, but avoid mentioning its fur and ears.”

Model Output: "A cat is an agile animal known for its curiosity, sharp claws, and keen senses."

Contextual Prompting

Definition: The model's output is influenced by the context in which the prompt is given.

Example:

Prompt 1: "What is the weather like?"

Model Output: "It's sunny."

Prompt 2: "What should I wear for a sunny day?"

Model Output: "You should wear light clothing, sunglasses, and sunscreen."

Challenges

Conclusion

Prompt engineering is a critical skill for leveraging the full potential of AI models. By understanding and applying the techniques outlined in this report, users can unlock more accurate, relevant, and creative outputs from AI systems. As the field evolves, ongoing research and experimentation will continue to refine these methods, making prompt engineering an indispensable tool in the AI toolkit.

Thank you