



# Tabya Conf 2025

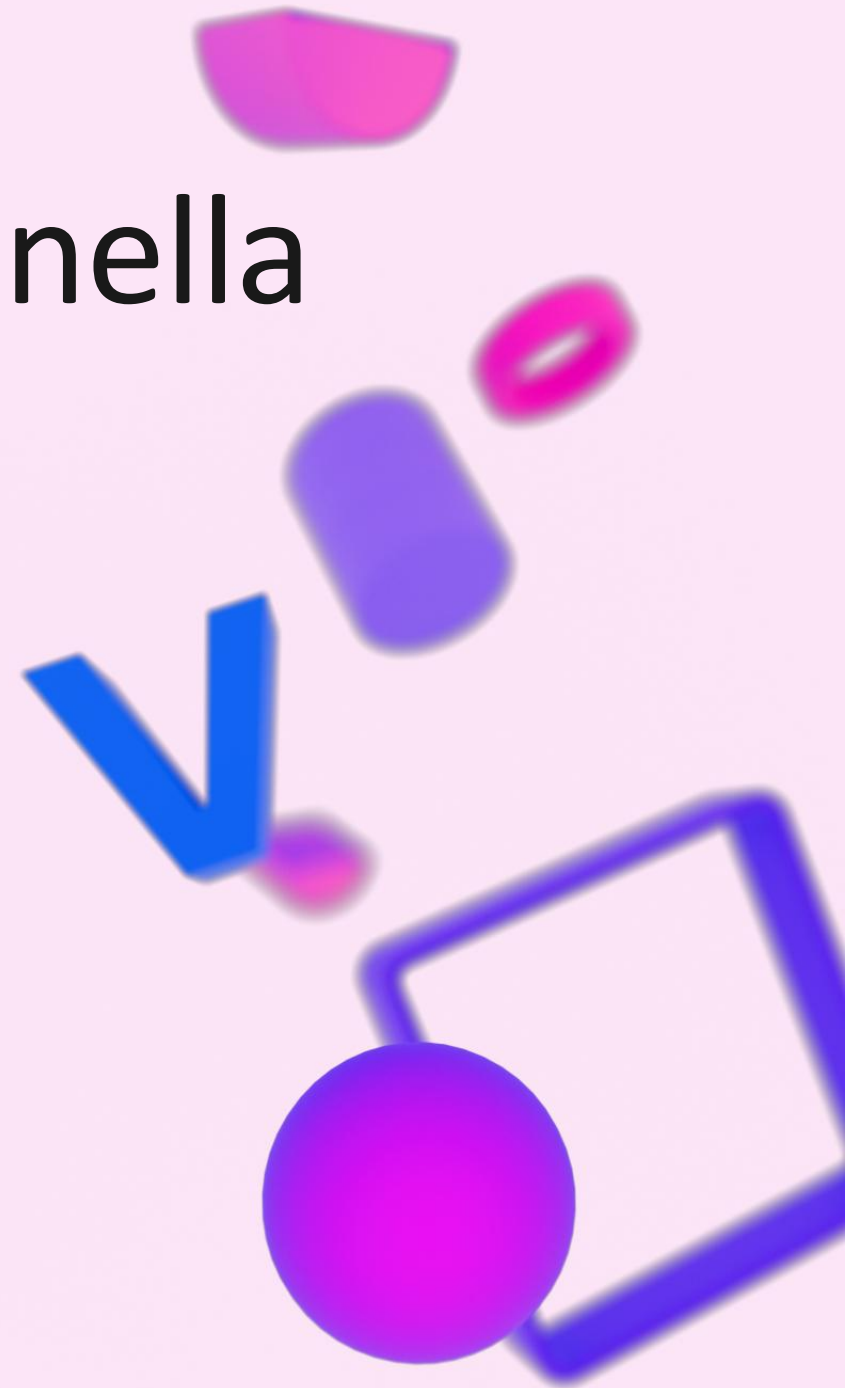
Presente e futuro dell'Intelligenza Artificiale



# Svela il Potere dei Prompt nella Generative AI

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# Understanding Prompt Engineering

$$f = \frac{m_1 m_2}{d^2}$$

$$i\hbar \frac{\partial}{\partial t} \psi = \hat{H} \psi$$

$$\phi(x) = \frac{1}{\sqrt{2\pi\sigma}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

$$E = mc^2$$

$$ds \geq 0$$

$$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$$

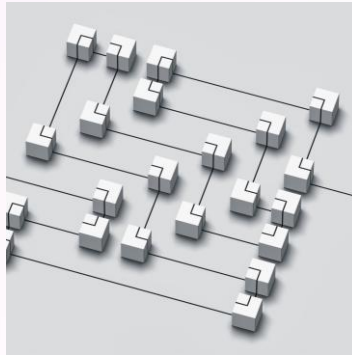
$$\frac{df}{dt} = \lim_{h \rightarrow 0} \frac{f(t+h) - f(t)}{h}$$

# Definition and Purpose



## Crafting Inputs

Prompt engineering involves creating precise and meaningful inputs to guide AI models effectively, optimizing their output quality.



## Guiding AI Models

The process emphasizes guiding AI models to generate relevant and accurate responses that meet user needs and expectations.



## Effective Interaction

The primary goal is to enhance the interaction between humans and AI, ensuring that communication is seamless and productive.



# Historical Context and Evolution

## Initial Simple Commands

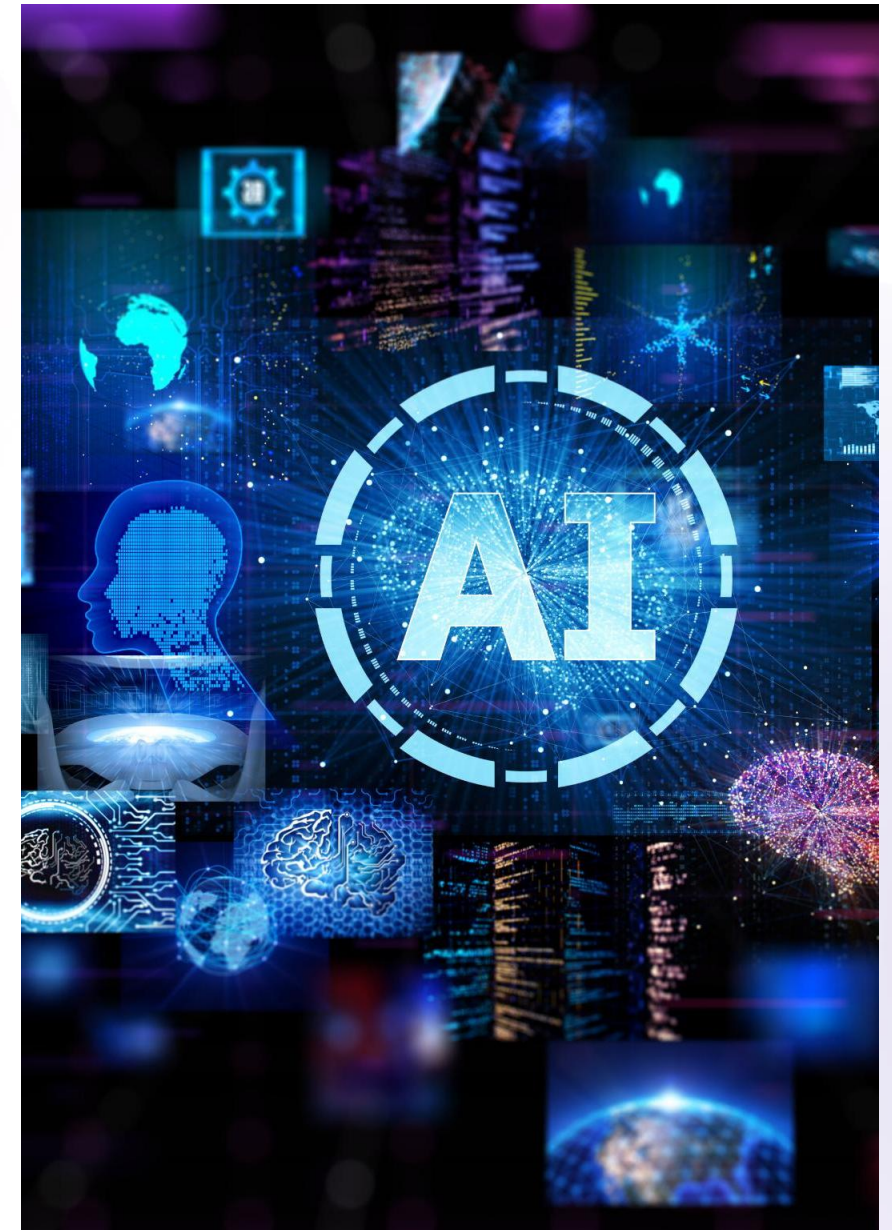
Early AI systems required only simple commands for functionality, limiting their capabilities to basic tasks.

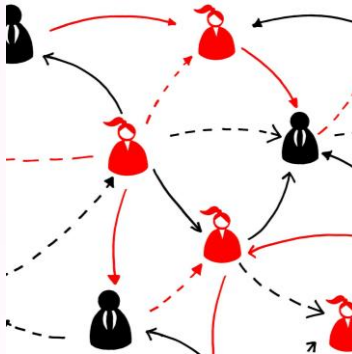
## Advancements in AI

With advancements in AI technologies, the complexity of tasks increased, necessitating more sophisticated prompts.

## Evolving Prompt Engineering

The evolution of prompt engineering highlights the growing need for nuanced interactions with AI systems to achieve desired outcomes.



[illegible]

Effective prompt engineering plays a vital role in optimizing interactions with AI systems, ensuring clearer communication.

Well-engineered prompts help reduce misunderstandings, leading to more accurate responses from AI systems.

When prompt engineering is done effectively, it enhances user satisfaction and increases the relevancy of AI outputs.



# Key Terminology in Prompt Engineering

$$\frac{m_1 m_2}{d^2}$$

$$i\hbar \frac{\partial}{\partial t} \psi = \hat{H} \psi$$

$$\phi(x) = \frac{1}{\sqrt{2\pi\sigma}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

$$E = mc^2$$

$$ds \geq 0$$

$$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$$

$$\frac{df}{dt} = \lim_{h \rightarrow 0} \frac{f(t+h) - f(t)}{h}$$





# Prompts

## Definition of a Prompt

A prompt serves as an input statement or question to AI models, guiding them towards generating a relevant response.

## Impact on Output Quality

The design and structure of a prompt can significantly affect the quality and relevance of the AI-generated output.



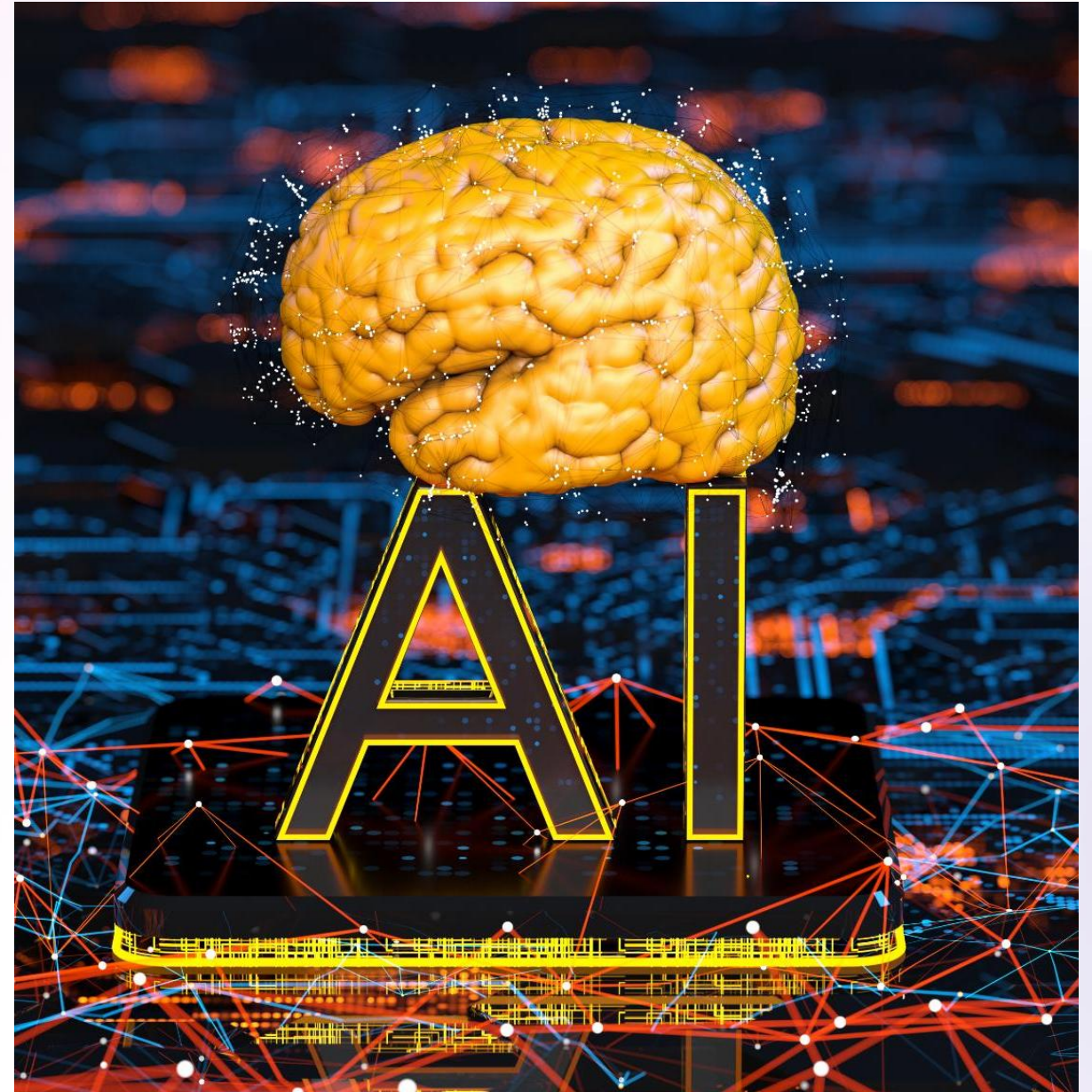
# Tokens

## Building Blocks of AI

Tokens serve as the fundamental components that AI models use to understand and process text.

## Importance of Tokens

Grasping the function of tokens is crucial for creating effective and concise prompts for AI communication.





# Context Window

## Definition of Context Window

The context window is the range of text that an AI model processes at once, influencing its understanding.

## Importance of Prompt Crafting

Crafting prompts within the context window is crucial for ensuring that AI responses are coherent and relevant to the inquiry.



$$F = G \frac{m_1 m_2}{d^2}$$

# Basic Principles of Effective Prompts

$$\phi(x) = \frac{1}{\sqrt{2\pi\sigma}} e^{-\frac{x-\mu}{2\sigma^2}}$$

$$i\hbar \frac{\partial}{\partial t} \psi = \hat{H} \psi$$

$$F - E + V = 2$$

$$E = mc^2$$

$$ds \geq 0$$

$$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$$

$$\frac{df}{dt} = \lim_{h \rightarrow 0} \frac{f(t+h) - f(t)}{h}$$

# Clarity and Specificity

## Importance of Clarity

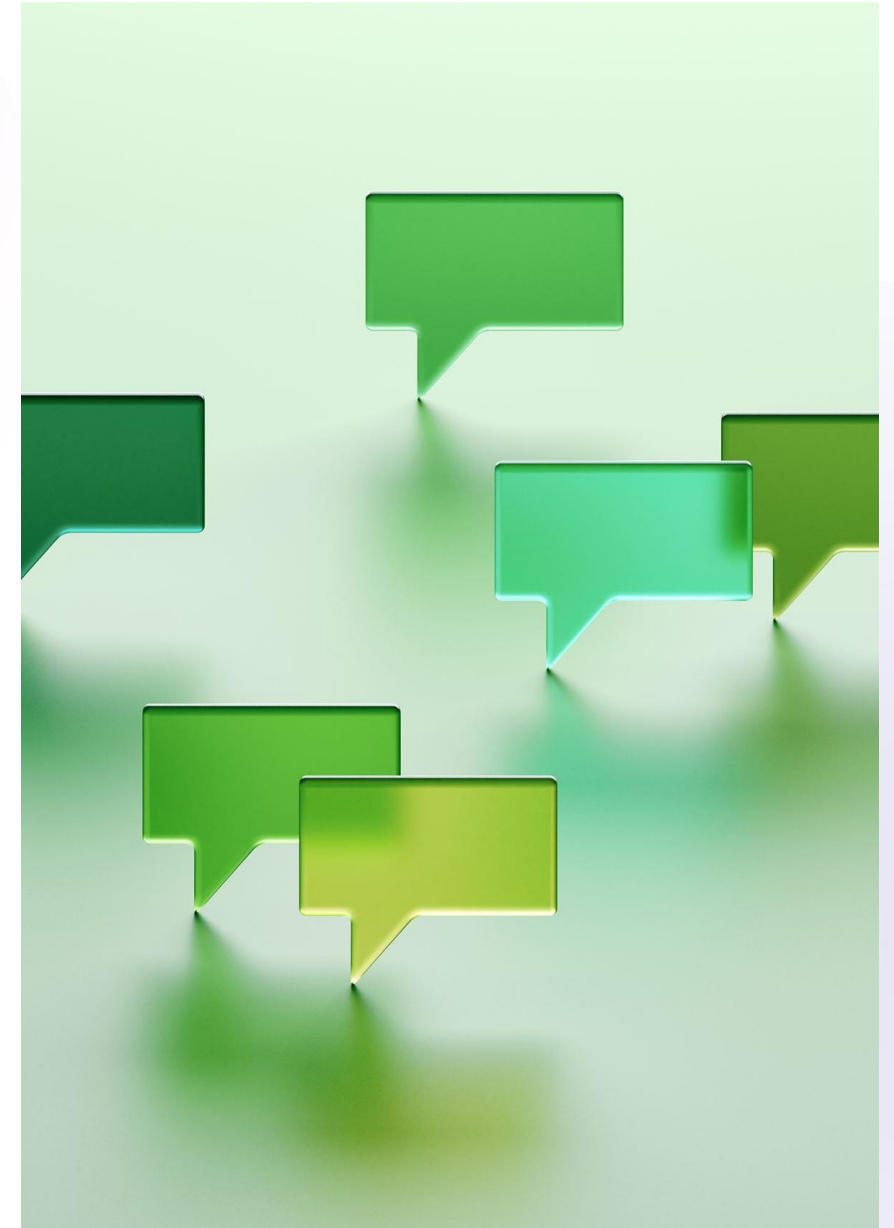
Clarity in prompts ensures that responses are relevant and focused, reducing the chance of misunderstandings.

## Avoiding Ambiguity

Ambiguous prompts can lead to misinterpretations, making it crucial to define queries with specific details.

## Defining Queries Precisely

Precise definitions in queries improve response accuracy and ensure that the desired information is provided.



# Providing Context



## Importance of Context

Providing context helps the AI grasp the nuances of requests, enhancing the quality of the outputs.

## Relevant Outputs

A well-defined context leads to more relevant and accurate responses from the AI, improving user satisfaction.



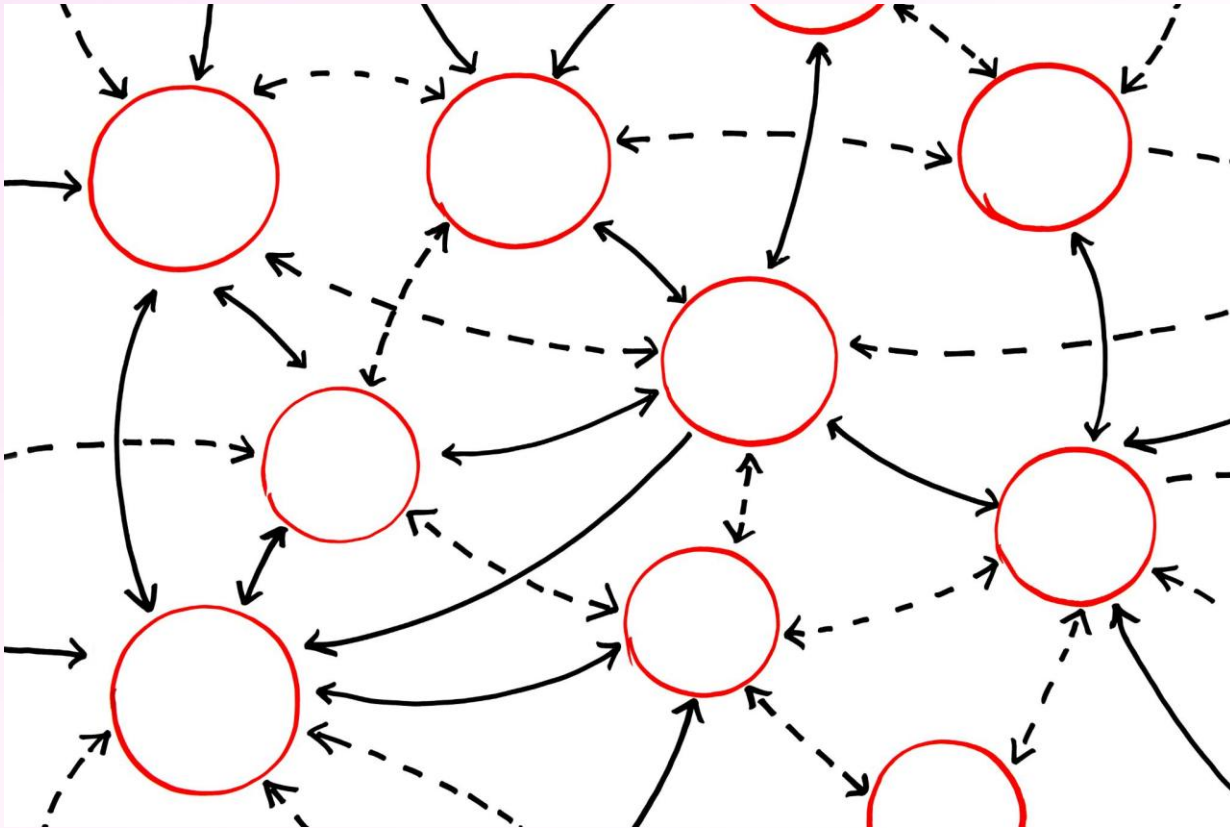
# Use of Examples

## Guiding AI Responses

Using examples helps steer AI towards generating more accurate and relevant responses based on clear references.

## Reference for Expected Output

Examples serve as references that provide context, improving the quality of AI-generated content.



# Tips and Tricks for Crafting Better Prompts





# Be Concise but Informative



## Importance of Balance

Striking a balance between conciseness and informativeness is crucial for effective communication. The right amount of information enhances understanding.

## Risks of Overloading Information

Providing too much information can overwhelm the AI, leading to confusion and ineffective responses. Simplifying prompts can improve outcomes.

## Consequences of Being Vague

Too little information can result in vague responses, making it difficult for the AI to understand the context and provide useful answers.



# Avoid Ambiguity



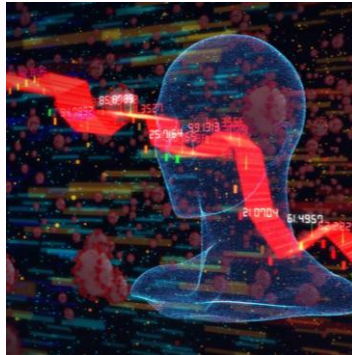
## Understanding Ambiguity

Ambiguous prompts can confuse AI, leading to unclear or irrelevant responses. Understanding this helps improve communication.



## Clarifying Prompts

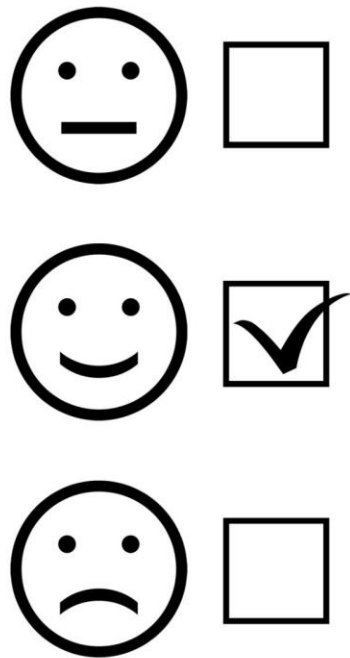
Eliminating uncertainty in prompts can lead to more accurate and meaningful results, enhancing AI performance.



## Impact on Results

Clear prompts enable AI to deliver precise results, while ambiguity often results in misinterpretation.

# Iterative Testing and Refinement



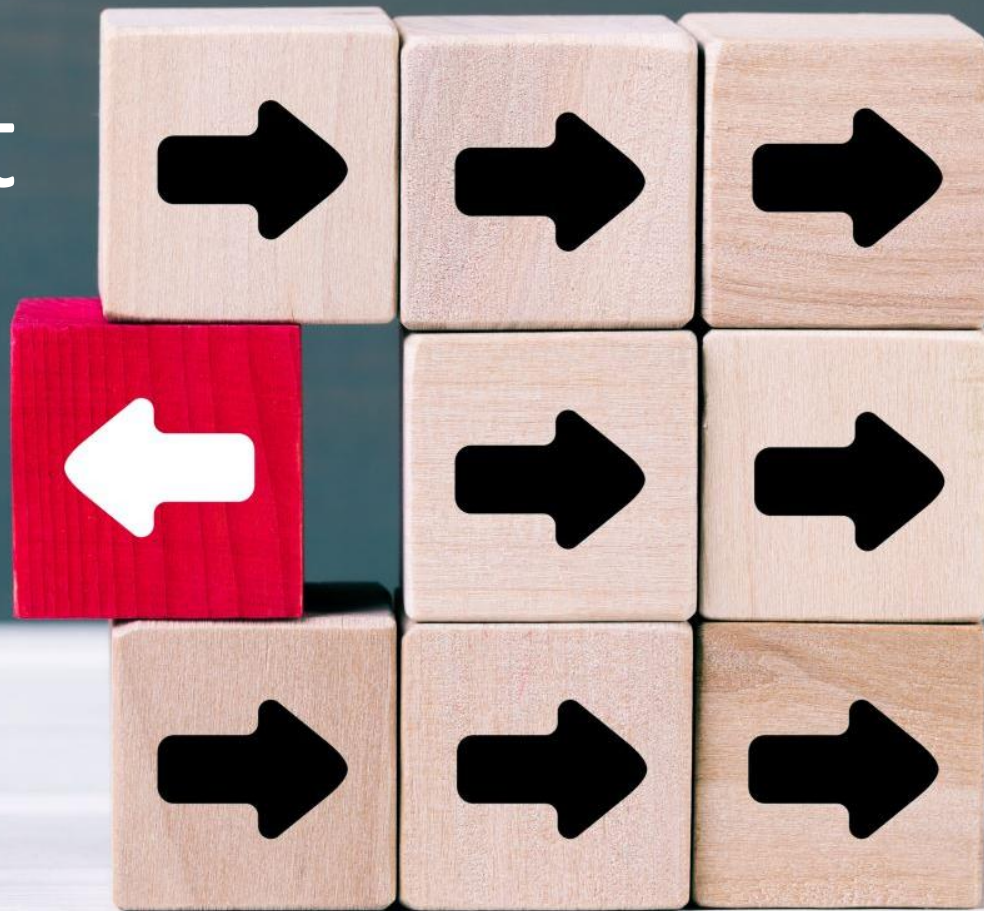
## Importance of Iteration

Iterative testing allows for continuous improvement, enhancing the quality of outputs through repeated assessments.

## Prompt Experimentation

Experimenting with various prompts can uncover new insights and drive better results in outputs.

# Before and After: Improving Prompt Efficiency





# Example 1: Simple Vs. Detailed Prompt

## Simple Prompt Example

A simple prompt tends to generate generic responses, lacking depth and specificity in information.

## Detailed Prompt Example

A detailed prompt offers specific guidelines and context, resulting in tailored and relevant outputs.

## Comparison of Outputs

Comparing outputs from simple and detailed prompts highlights the importance of specificity in eliciting better responses.



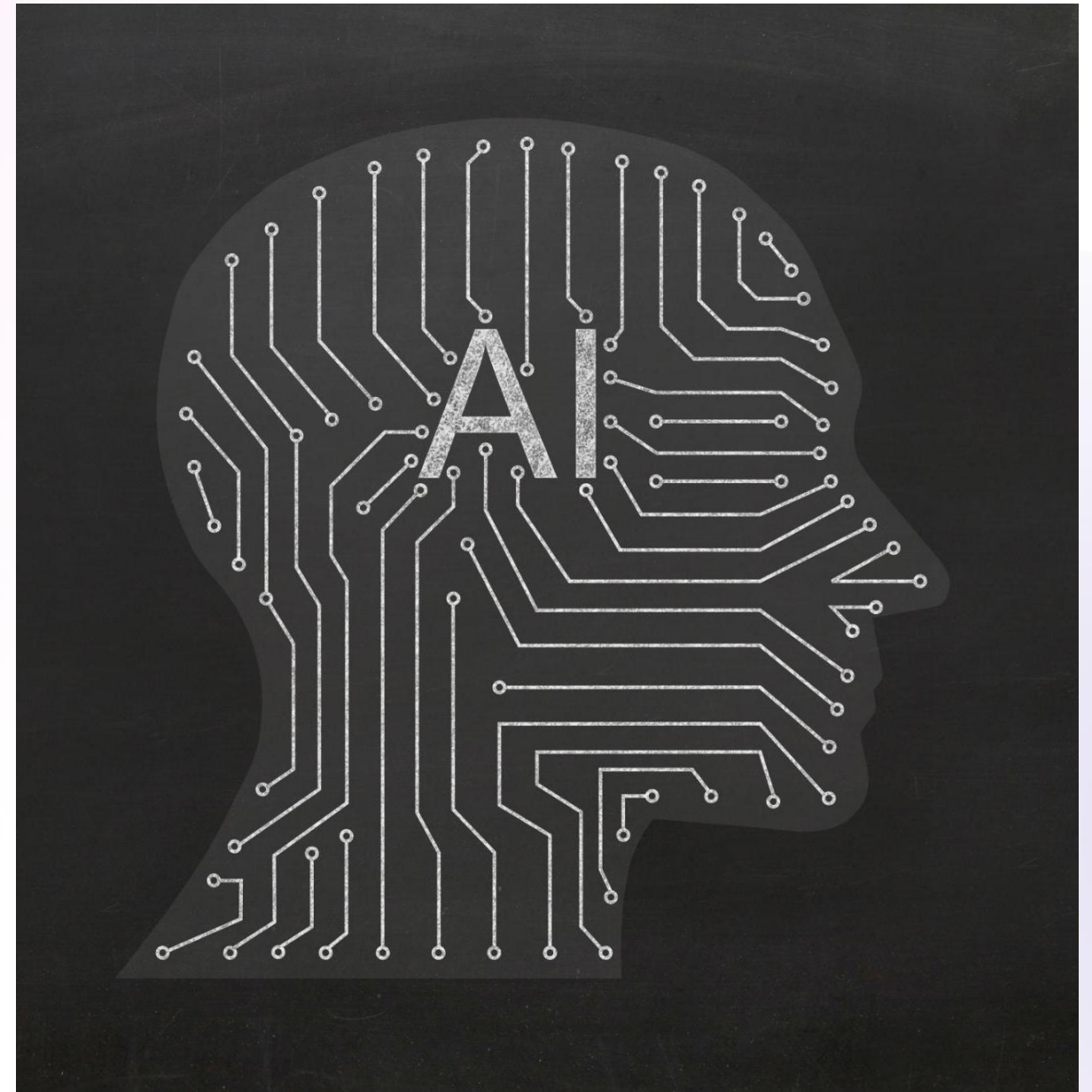
## Example 2: Ambiguous Vs. Clear Prompt

### Ambiguous Prompt Issues

An ambiguous prompt can result in confusion and irrelevant answers, making it challenging for the AI to respond appropriately.

### Benefits of Clear Prompts

Using a clear prompt ensures that the AI understands the question, leading to accurate and relevant answers.





# Example 3: General Vs. Context-Specific Prompt

## **Broad Responses**

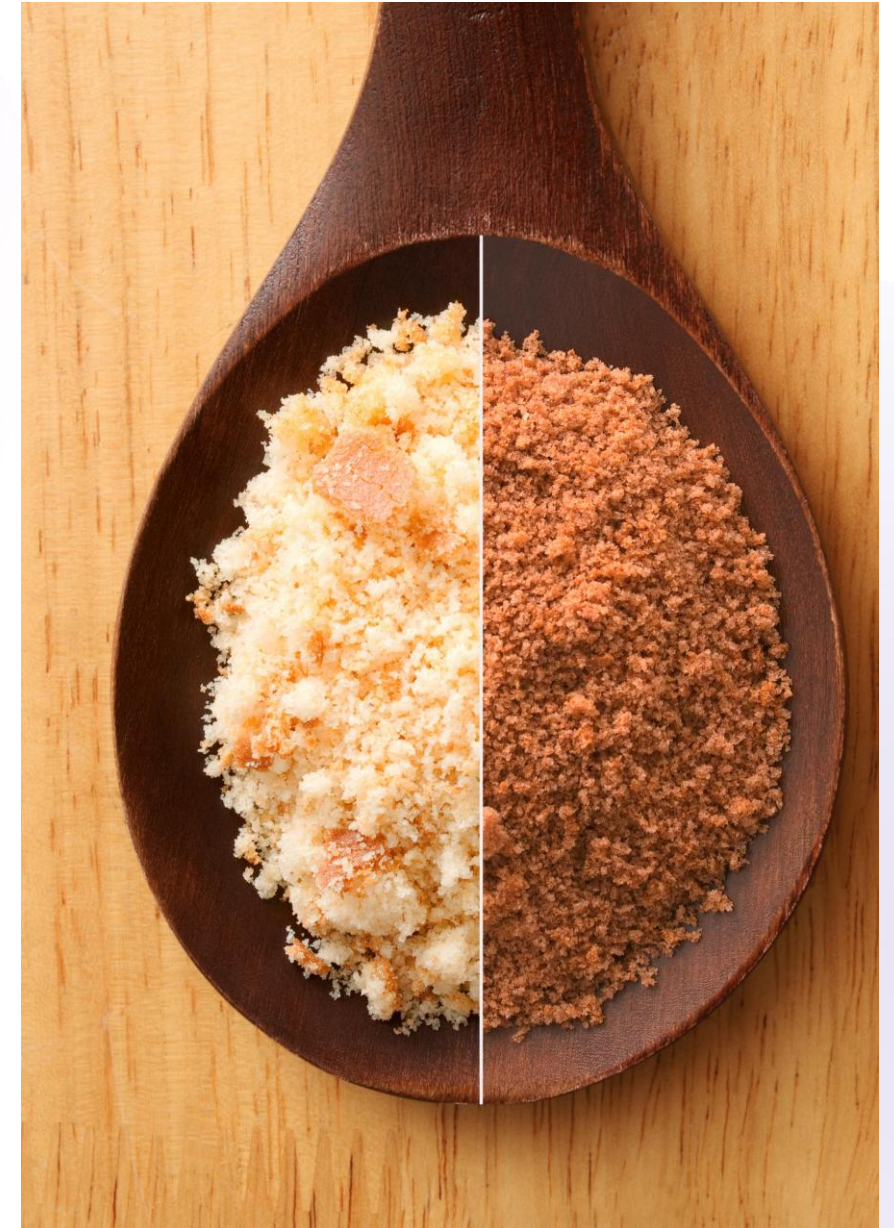
General prompts tend to produce broad and less focused responses, which may lack precision.

## **Improved Relevance**

Context-specific prompts enhance the relevance of the responses by providing clear boundaries and focus.

## **Accuracy of Output**

Using context-specific prompts leads to more accurate and applicable outputs, benefiting decision-making.





The background of the image is a close-up, blue-tinted photograph of a financial document. It features a line graph with a jagged, fluctuating line. A pen is positioned diagonally across the upper right portion of the chart. Faint numerical values are visible on the left side of the chart, including '2.5' and '2.0'. On the right side, the number '2.47' is partially visible. The overall aesthetic is professional and analytical.

# Advanced Techniques for Optimal Prompts

# Incorporating User Intent



## Importance of User Intent

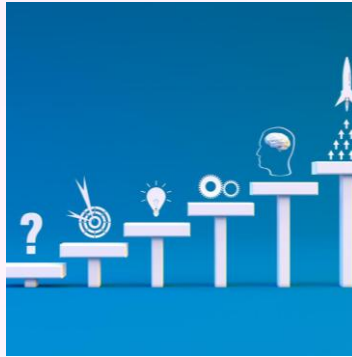
Recognizing user intent is essential for creating prompts that effectively address user needs and expectations.

## Tailoring Prompts

Adapting prompts based on user intent leads to better engagement and more accurate responses to user inquiries.



# Leveraging AI Capabilities and Limitations



## Understanding AI Strengths

Recognizing what AI can do well helps in crafting effective prompts that enhance its capabilities and productivity.



## Identifying AI Limitations

Being aware of AI's limitations helps in avoiding tasks that may lead to errors or ineffective results.



## Crafting Effective Prompts

Creating prompts that align with AI's strengths ensures better performance and more accurate outcomes.

# Utilizing Feedback for Continuous Improvement

## Importance of Feedback

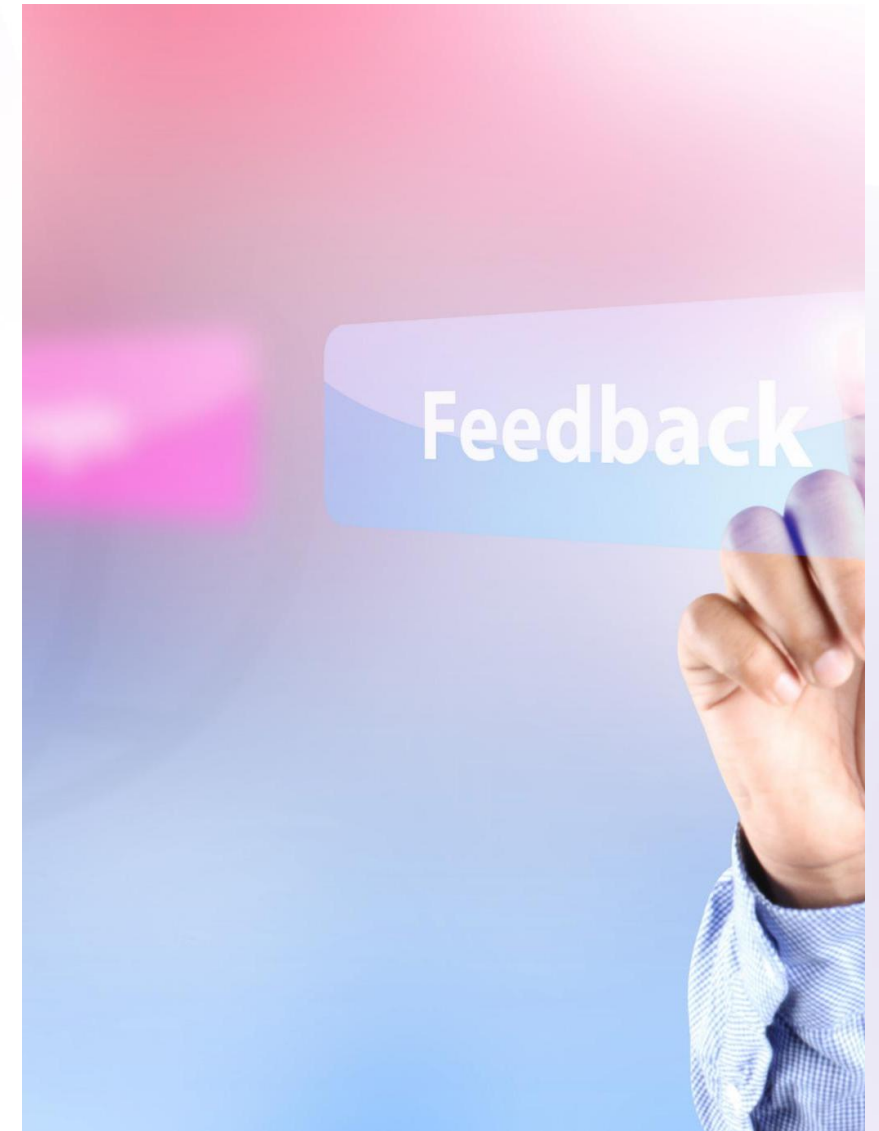
Collecting feedback is crucial for understanding user experiences and identifying areas for improvement in AI interactions.

## Analyzing Insights

Analyzing feedback provides insights that guide the refinement of AI prompts and enhance the overall interaction quality.

## Ongoing Enhancements

Using feedback for continuous improvement ensures that AI systems evolve and adapt to user needs over time.



# Conclusion

## **Importance of Prompt Engineering**

Mastering prompt engineering is crucial for enhancing AI interactions and achieving desired outcomes.

## **Enhancing AI Responses**

Applying effective principles and techniques can significantly improve the quality of AI responses.

## **Effective Communication**






Optimizing prompt engineering leads to more effective communication between users and AI systems.

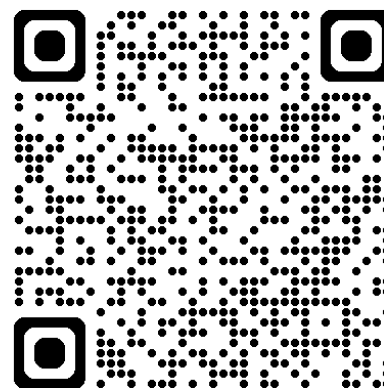


- 30+ years in IT (Developer, Architect, Senior Consultant, PM, Trainer)
- Speaker, Community addicted
- IoT Influencer
- Microsoft Certified Trainer

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# Thanks!

## Questions???



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