

SUMMARIZING  
RESEARCH PAPER  
USING  
**PROMPT ENGINEERING**

**LINK OF RESEARCH PAPER:** [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4708466](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4708466)

## PROMPTS TO GENERATE THE SUMMARY

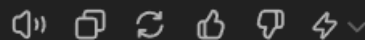
- Initial prompt :-



Provide the summary and the key points of the research papers which will be provided in maximum of 300 words which should cover each important points and should be easy to understood.



Sure! Just provide me with the research papers, and I'll summarize the key points for you. If there are any specific aspects or sections you want to focus on, let me know as well.





# PROMPTS TO GENERATE THE SUMMARY

- Uploading the published research paper and evaluating the output.



ssrn-4708466.pdf  
PDF



Here's a summary of the research paper "Prompting Diverse Ideas: Increasing AI Idea Variance":

## Summary:

The paper explores methods to increase the diversity of ideas generated by Artificial Intelligence (AI), specifically using GPT-4, for creative and innovative processes. While AI can efficiently generate a high volume of ideas, prior research indicates that the diversity (or variance) of these ideas is often limited, which restricts the novelty and quality of the best ideas. The authors investigate various prompting strategies to enhance the diversity of AI-generated ideas. They found that while AI-generated ideas are generally less diverse than those created by human groups, prompt engineering can significantly improve diversity. The most effective prompting strategy identified was "Chain-of-Thought" (CoT) prompting, which demonstrated the highest diversity levels achieved by human business teams in previous studies.

# SUMMARY

The paper explores methods to increase the diversity of ideas generated by Artificial Intelligence (AI), specifically using GPT-4, for creative and innovative processes. While AI can efficiently generate a high volume of ideas, prior research indicates that the diversity (or variance) of these ideas is often limited, which restricts the novelty and quality of the best ideas. The authors investigate various prompting strategies to enhance the diversity of AI-generated ideas. They found that while AI-generated ideas are generally less diverse than those created by human groups, prompt engineering can significantly improve diversity. The most effective prompting strategy identified was "Chain-of-Thought" (CoT) prompting, which closely matched the diversity levels achieved by human brainstorming groups.

## Key Points:

1. Research Motivation: AI systems, while efficient at generating ideas, often produce ideas that are too similar to each other, limiting creativity and innovation potential.
2. Methods and Metrics: The study used GPT-4 and compared multiple prompting strategies, including minimal prompting, persona-based prompting, and CoT prompting. Key metrics for evaluating idea diversity included Cosine Similarity, the number of unique ideas, and the speed at which the idea space is exhausted.
3. Findings:
  - ~ Baseline Performance: AI-generated ideas with no special prompts were less diverse compared to ideas generated by human subjects (Cosine Similarity for AI: 0.255 - 0.432; Humans: 0.243).
  - ~ Prompt Engineering: Prompt diversity can be enhanced by using creative personas (e.g., "Think like Steve Jobs") and other structured prompts.
  - ~ Chain-of-Thought Prompting: This method led to the highest diversity of ideas and generated the most unique ideas, demonstrating its effectiveness in creative AI applications.
4. Implications: Effective prompt engineering can close the gap between human and AI-generated creativity, suggesting that combining different AI prompting strategies may yield the most innovative outcomes.



## PROMPTS TO EVALUATE AND VERIFY THE SUMMARY

Verify that if the summary is correct also Assess the final summary and insights based on clarity, accuracy, and relevance in 140 words



The summary is accurate and effectively captures the essence of the paper. Here's a refined version in 140 words:

The paper investigates strategies to enhance idea diversity in AI-generated outputs using GPT-4. Despite AI's efficiency, its ideas often lack diversity compared to human-generated ones, limiting innovation. The study compared various prompting methods: minimal, persona-based, and Chain-of-Thought (CoT) prompting. Metrics like Cosine Similarity and the uniqueness of ideas were used. Findings reveal that baseline AI-generated ideas are less diverse than those from human brainstorming (Cosine Similarity for AI: 0.255-0.432; Humans: 0.243). Prompt engineering, particularly CoT prompting, significantly boosts idea diversity and uniqueness. The study suggests that well-crafted prompts can enhance AI creativity, potentially bridging the gap between human and AI-generated ideas and leading to more innovative outcomes.



# BRIEF REFLECTION OF MY LEARNING EXPERIENCE IN PROMPT ENGINEERING THROUGH SKILLIBLE

Learning prompt engineering has been a rewarding yet challenging journey. Initially, grasping the nuances of how different prompts can influence an AI's responses was both exciting and overwhelming. The trial-and-error process revealed the intricacies of crafting effective prompts—balancing specificity with flexibility. One significant challenge was understanding the fine line between overly broad and overly detailed prompts. Finding the right level of detail to elicit accurate and relevant responses required experimentation and patience.

Through this process, I gained valuable insights into the importance of clarity and context. I learned that a well-structured prompt not only improves the quality of the AI's output but also enhances the efficiency of interactions. Additionally, I discovered the power of iterative refinement; small adjustments can lead to significantly better outcomes. This experience highlighted the importance of continuous learning and adaptation, as the field of prompt engineering evolves rapidly with advancements in AI technology. Overall, the journey has deepened my appreciation for the complexities of AI-human interaction and the critical role that precise communication plays in leveraging AI effectively.

**THANK YOU :)**