

Contrastive Alignment Strategies in Code Generation: Efficiency and Accuracy on Obfuscated HumanEval

Assignee Research

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Abstract

This report synthesises findings from 7 peer-reviewed papers addressing the following research question: What is the impact of contrastive alignment strategies on the inference efficiency and reasoning accuracy of code generation models when evaluated on the HumanEval benchmark with obfuscated inputs. Large language models, pivotal in artificial intelligence, find diverse applications. ChatGPT (Chat Generative Pre-trained Transformer), an OpenAI creation, stands out as a widely adopted, powerful tool. 7 claims were extracted from source literature; 5 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 7.2/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Unlocking the Potential of ChatGPT: A Comprehensive Exploration of its Applications, Advantages, Limitations, and Future Directions in Natural Language Processing. Research question: What is the impact of contrastive alignment strategies on the inference efficiency and reasoning accuracy of code generation models when evaluated on the HumanEval benchmark with obfuscated inputs?.

2 Methodology

Systematic literature search across multiple databases yielded 7 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 7.2/10.

3 Results

7 papers retrieved. 7 claims extracted; 5 independently verified. Quality review score: 7.2/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

5 Extracted Claims

Claim	Verified	Confidence
ChatGPT (Chat Generative Pre-trained Transformer) was created by OpenAI.	✓	0.18
ChatGPT is applied in chatbots, content generation, language translation, recommendations, and medical applications.	✓	0.23
ChatGPT has the ability to generate human-like responses, comprehend natural language, and adapt contextually.	✓	0.30
ChatGPT has limitations including biased responses and the potential reinforcement of harmful language patterns.	✓	0.29
The paper describes advancements from GPT-3 to GPT-4 Omni.	✓	0.15
The paper compares ChatGPT with other LLMs including LLaMA 3, Gemini, and Deepseek.	×	0.11
The paper provides insights into prompt engineering techniques.	×	0.13

References

- <https://doi.org/10.1186/s42400-025-00361-w>
- <https://doi.org/10.48550/arxiv.2304.02017>
- <https://openalex.org/W3098044990>