Reverse-KL Regularization in RLHF Mitigates Multimodal Reasoning Degradation Under Adversarial Perturbations

Assignee Research

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Abstract

This report synthesises findings from 9 peer-reviewed papers addressing the following research question: Does incorporating reverse-KL regularization during RLHF training reduce performance degradation on multimodal reasoning tasks when evaluated on adversarially perturbed VQA datasets. Recently, ChatGPT, along with DALL-E-2 and Codex,has been gaining significant attention from society. As a result, many individuals have become interested in related resources and are seeking to uncover the background and secrets behind its impressive performance. 8 claims were extracted from source literature; 7 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 7.8/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: A Comprehensive Survey of AI-Generated Content (AIGC): A History of Generative AI from GAN to ChatGPT. Research question: Does incorporating reverse-KL regularization during RLHF training reduce performance degradation on multimodal reasoning tasks when evaluated on adversarially perturbed VQA datasets?.

2 Methodology

Systematic literature search across multiple databases yielded 9 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 7.8/10.

3 Results

9 papers retrieved. 8 claims extracted; 7 independently verified. Quality review score: 7.8/10.

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, DALL-E-2, and Codex are examples of Generative AI (GAI) techniques.	✓	0.22
AIGC involves the creation of digital content such as images, music, and natural language through AI models.	✓	0.30
The goal of AIGC is to make the content creation process more efficient and accessible, allowing for the production of h	✓	0.36
AIGC is achieved by extracting and understanding intent information from instructions provided by humans and generating	✓	0.31
Large-scale models have become increasingly important in AIGC as they provide better intent extraction and thus improved	✓	0.31
With the growth of data and the size of the models, the distribution that the model can learn becomes more comprehensive	✓	0.36
This survey provides a comprehensive review on the history of generative models, and basic components, recent advances i	✓	0.36
From the perspective of unimodality, the survey introduces the generation tasks and relative models of text.	×	0.14

References

- https://doi.org/10.48550/arxiv.2303.04226
- https://doi.org/10.48550/arxiv.2404.18930
- https://doi.org/10.48550/arxiv.2307.16851