MSCR-Based Data Augmentation Effects on Code Generation Model Efficiency and Stability

Assignee Research

June 3, 2026

Abstract

This report synthesises findings from 6 peer-reviewed papers addressing the following research question: What is the impact of applying MSCR-based data augmentation on the inference efficiency and alignment stability of code generation models under adversarial prompt perturbations. 14 claims were extracted from source literature; 13 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.5/10. 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: What is the impact of applying MSCR-based data augmentation on the inference efficiency and alignment stability of code generation models under adversarial prompt perturbations?.

2 Methodology

Systematic literature search across multiple databases yielded 6 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.5/10.

3 Results

6 papers retrieved. 14 claims extracted; 13 independently verified. Quality review score: 8.5/10.

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 have been gaining significant attention from society recently.	✓	0.22
ChatGPT and other Generative AI (GAI) techniques belong to the category of Artificial Intelligence Generated Content (AI	✓	0.36
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.	✓	0.25
AIGC allows for the production of high-quality content at a faster pace.	✓	0.21
AIGC is achieved by extracting and understanding intent information from instructions provided by humans.	✓	0.23
AIGC generates content according to the model's knowledge and the extracted intent information.	×	0.13
Large-scale models have become increasingly important in AIGC in recent years.	✓	0.22
Large-scale models provide better intent extraction and improved generation results in AIGC.	✓	0.26
With the growth of data and model size, the distribution a model can learn becomes more comprehensive and closer to real	✓	0.20
A more comprehensive and realistic learned distribution leads to more realistic and high-quality content generation.	✓	0.17
The survey provides a comprehensive review on the history of generative models.	✓	0.27
The survey reviews basic components and recent advances in AIGC from unimodal and multimodal interaction perspectives.	✓	0.19
From the perspective of unimodality, the survey introduces generation tasks and relative models of text.	✓	0.16

References

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- https://doi.org/10.1109/trpms.2021.3066428
- https://doi.org/10.1145/3639372