Program Synthesis Integration in Multimodal LLMs Enhances 3D Arrangement Accuracy

Assignee Research

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Abstract

This report synthesises findings from 16 peer-reviewed papers addressing the following research question: Does the integration of program synthesis with multimodal LLMs improve the accuracy of 3D arrangement generation compared to baseline text-to-3D models when evaluated on the 3D-Arrange benchmark. 14 claims were extracted from source literature; 2 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 5.2/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: YouZhi: Towards High-Concurrency Financial LLMs via Adaptive GQA-to-MLA Transition. Research question: Does the integration of program synthesis with multimodal LLMs improve the accuracy of 3D arrangement generation compared to baseline text-to-3D models when evaluated on the 3D-Arrange benchmark?.

2 Methodology

Systematic literature search across multiple databases yielded 16 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 5.2/10.

3 Results

16 papers retrieved. 14 claims extracted; 2 independently verified. Quality review score: 5.2/10.

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
YouZhi-LLM deployed on Huawei Ascend NPUs using the vLLM-Ascend inference framework achieves a 72% KV cache reduction.	✓	0.22
YouZhi-LLM deployed on Huawei Ascend NPUs using the vLLM-Ascend inference framework achieves a 2.69$\times$ improvement in maxi	✓	0.20
FinBERT consistently outperforms vanilla BERT on financial tasks including sentiment analysis, news classification, and	×	0.02
BloombergGPT is a 50B-parameter model continually pre-trained on decades of proprietary financial datasets.	×	0.05
BloombergGPT yields state-of-the-art results across mainstream financial NLP benchmarks.	×	0.07
FinGPT integrates LoRA fine-tuning and retrieval-augmented generation (RAG) to support low-cost domain adaptation.	×	0.05
FinGPT achieves substantial improvements in financial sentiment analysis and market-aware logical reasoning.	×	0.03
YiZhao-12B-Chat enhances domain alignment via financial supervised fine-tuning (SFT) and direct preference optimization	×	0.05
YouZhi achieves an accuracy gain of +6.4% and efficiency improvement of $\times$2.43 over the Qwen2.5-14B-Ins baseline.	×	0.09
YouZhi achieves an accuracy gain of +13.6% and efficiency improvement of $\times$2.69 over the OpenPangu-7B baseline.	×	0.09
The perplexity of the OpenPangu-7B-MLA model achieved by layer-adaptive TransMLA shows a 35% reduction.	×	0.10
In shallow layers (e.g., 0-5) of the GQA2MLA transition, a FreqFold size of 8 yields the lowest perplexity.	×	0.06
In middle layers (e.g., 16-25) of the GQA2MLA transition, a FreqFold size of 1 yields the minimal perplexity.	×	0.05
Multiple mainstream LLMs demonstrate a substantial perplexity reduction with YouZhi compared to uniform conversion basel	×	0.09

References

- http://arxiv.org/abs/2508.19294v2
- http://arxiv.org/abs/2509.02918v1
- http://arxiv.org/abs/2606.05868v1