

# Multimodal Model Robustness to Distribution Shifts via Structural Causal Augmentation

Assignee Research

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## Abstract

This report synthesises findings from 13 peer-reviewed papers addressing the following research question: Do multimodal models trained with structural causal model augmentation demonstrate higher robustness to distribution shifts in MMBench subsets than those trained with synthetic minority oversampling. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 3.3/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: Enhancing Robustness of Foundation Model Representations under Provenance-related Distribution Shifts. Research question: Do multimodal models trained with structural causal model augmentation demonstrate higher robustness to distribution shifts in MMBench subsets than those trained with synthetic minority oversampling?.

## 2 Methodology

Systematic literature search across multiple databases yielded 13 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 3.3/10.

## 3 Results

13 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 3.3/10.

## 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.

## References

- <http://arxiv.org/abs/2312.05435v1>
- <http://arxiv.org/abs/2603.10254v1>
- <http://arxiv.org/abs/2512.03307v1>