

# Synthetic Data Composition and Out-of-Distribution Performance in Phi-3-Mini

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## Abstract

This report synthesises findings from 9 peer-reviewed papers addressing the following research question: How does the synthetic data composition in phi-3-mini's training affect its performance degradation on out-of-distribution benchmarks compared to models trained primarily on natural web data. In this work, we explore the possibility of using synthetically generated data for video-based gesture recognition with large pre-trained models. We consider whether these models have sufficiently robust and expressive representation spaces to enable "training-free". 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 3.2/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: An Evaluation of Large Pre-Trained Models for Gesture Recognition using Synthetic Videos. Research question: How does the synthetic data composition in phi-3-mini's training affect its performance degradation on out-of-distribution benchmarks compared to models trained primarily on natural web data?.

## 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 3.2/10.

### **3 Results**

9 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 3.2/10.

### **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.

### **References**

- <http://arxiv.org/abs/2512.03307v1>
- <http://arxiv.org/abs/2104.11797v1>
- <http://arxiv.org/abs/2410.02152v1>