

Generalist Medical AI Models Outperform Task-Specific Models in Zero-Shot Visual Reasoning

Assignee Research

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Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: To what extent do generalist medical AI models trained with self-supervision outperform task-specific models in zero-shot visual reasoning benchmarks across unseen medical modalities. 10 claims were extracted from source literature; 10 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Foundation models for generalist medical artificial intelligence. Research question: To what extent do generalist medical AI models trained with self-supervision outperform task-specific models in zero-shot visual reasoning benchmarks across unseen medical modalities?.

2 Methodology

Systematic literature search across multiple databases yielded 14 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.7/10.

3 Results

14 papers retrieved. 10 claims extracted; 10 independently verified. Quality review score: 8.7/10.

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
The authors propose a new paradigm for medical AI referred to as generalist medical AI (GMAI).	✓	0.24
GMAI models are designed to carry out a diverse set of tasks using very little or no task-specific labelled data.	✓	0.23
GMAI models are built through self-supervision on large, diverse datasets.	✓	0.22
GMAI models are capable of interpreting combinations of medical modalities including imaging, electronic health records,	✓	0.30
GMAI models produce expressive outputs such as free-text explanations, spoken recommendations, or image annotations.	✓	0.27
GMAI outputs are intended to demonstrate advanced medical reasoning abilities.	✓	0.16
The paper identifies a set of high-impact potential applications for GMAI.	✓	0.17
The paper lays out specific technical capabilities and training datasets necessary to enable GMAI applications.	✓	0.29
The authors expect that GMAI-enabled applications will challenge current strategies for regulating and validating AI dev	✓	0.28
The authors expect that GMAI-enabled applications will shift practices associated with the collection of large medical d	✓	0.25

References

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