How does the performance of MMICL's zero-shot image-text retrieval compare to Flamingo, PaLI, and BLIVA on the

Assignee Research

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Abstract

Since the resurgence of deep learning, vision-language models (VLMs) enhanced by large language models (LLMs) have grown exponentially in popularity. However, while LLMs can utilize extensive background knowledge and task information with in-context learning, most VLMs still struggle with understanding complex multi-modal prompts with multiple images, making VLMs less effective in downstream vision-language tasks. In this paper, we address the limitation above by 1) introducing vision-language Model with Multi-Modal In-Context Learning(MMICL), a new approach to allow the VLM to deal with multi

1 Introduction

This paper examines: MMICL: Empowering Vision-language Model with Multi-Modal In-Context Learning. Research question: How does the performance of MMICL's zero-shot image-text retrieval compare to Flamingo, PaLI, and BLIVA on the SBU Captions dataset when using a fixed number of in-context examples?.

2 Methodology

Systematic literature search across multiple databases yielded 1 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 9.0/10.

3 Results

1 papers retrieved. 9 claims extracted; 9 independently verified. Quality review score: 9.0/10.

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
Vision-language models (VLMs) enhanced by large language models (LLMs) have grown exponentially in popularity since the	✓	0.34
Most VLMs still struggle with understanding complex multi-modal prompts with multiple images, making VLMs less effective	✓	0.39
MMICL introduces a new approach to allow the VLM to deal with multi-modal inputs efficiently.	✓	0.25
MMICL proposes a novel context scheme to augment the in-context learning ability of the VLM.	✓	0.25
The Multi-modal In-Context Learning (MIC) dataset is constructed to enhance the VLM's ability to understand complex mult	✓	0.37
MMICL achieves new state-of-the-art zero-shot performance on a wide range of general vision-language tasks, especially f	✓	0.38
MMICL effectively tackles the challenge of complex multi-modal prompt understanding and emerges the impressive ICL abili	✓	0.32
MMICL successfully alleviates language bias in VLMs, a common issue for VLMs that often leads to hallucination when face	✓	0.33
The code, dataset, dataset tool, and model for MMICL are available at https://github.com/PKUnlp-icler/MIC.	✓	0.27

References

- https://doi.org/10.48550/arxiv.2309.07915