Global-Local Semantic Consistency Enhances Robustness in Multimodal Retrieval Against Adversarial Frame Dropping

Assignee Research

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Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: Does global-local semantic consistent learning improve robustness against adversarial frame dropping in multimodal retrieval models evaluated on the DiDeMo dataset. 11 claims were extracted from source literature; 2 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.8/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Text-Video Retrieval With Global-Local Contrastive Consistency Learning. Research question: Does global-local semantic consistent learning improve robustness against adversarial frame dropping in multimodal retrieval models evaluated on the DiDeMo dataset?.

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 4.8/10.

3 Results

14 papers retrieved. 11 claims extracted; 2 independently verified. Quality review score: 4.8/10.

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
GLCCL achieves 47.6 R@1 and 13.0 MnR on MSR-VTT, surpassing the baseline by +1.5% and +0.2% absolute improvements.	×	0.03
GLCCL yields +3.4% and +0.7% improvements on R@1 compared with recent methods, i.e., CenterClip and X-Pool, respectively	×	0.03
The initial learning rate is set as 1e-7 for CLIP encoders and 1e-4 for others.	×	0.02
The feature dimension is set as 512.	×	0.04
The batch size is 128 for all datasets except DiDeMo (64).	×	0.02
The word length and frame length are set as 32, 12 in MSR-VTT and VATEX while 64, 64 in DiDeMo.	×	0.04
All videos are compressed to 3FPS (Frame Per Second) with width 224 or height 224.	×	0.03
GLCCL outperforms existing methods on most of the evaluation metrics on MSR-VTT, DiDeMo, and VATEX.	×	0.08
The Global-Local Interaction Module (GLIM) aligns text and video semantics with different granularity.	✓	0.21
The Contrastive Score Consistency (CSC) loss promotes consistency learning on positive pairs and suppresses consistency	✓	0.28
GLCCL achieves comparable results across three public benchmarks of MSR-VTT, DiDeMo, and VATEX.	×	0.09

References

- `http://arxiv.org/abs/2405.12710v3`

- http://arxiv.org/abs/2308.09089v1
- http://arxiv.org/abs/2605.17959v1