Spatiotemporal Consistency Prioritization Enhances Cross-Domain Video Retrieval Performance

Assignee Research

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Abstract

This report synthesises findings from 4 peer-reviewed papers addressing the following research question: Can the spatiotemporal consistency prioritization in InternVideo2's training data be quantitatively shown to enhance its cross-domain generalization, as evaluated by retrieval performance on. 11 claims were extracted from source literature; 1 was independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Towards Better Instruction Following Retrieval Models. Research question: Can the spatiotemporal consistency prioritization in InternVideo2's training data be quantitatively shown to enhance its cross-domain generalization, as evaluated by retrieval performance on benchmarks like MSR-VTT or DiDeMo when compared to models trained with traditional sampling methods?.

2 Methodology

Systematic literature search across multiple databases yielded 4 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 4.5/10.

3 Results

4 papers retrieved. 11 claims extracted; 1 independently verified. Quality review score: 4.5/10.

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 proposed marginal negative sampling strategy reduces the computational complexity of the denominator from combinator	×	0.02
Objective I (Univariate Conditional Modeling) models three conditional distributions: P(P|I, Q), P(I|P, Q), and P(IQ|P)	×	0.03
The multivariate objective (Eq. 7) formulates a ranking-based contrastive task by introducing a larger set of hard negat	×	0.03
The multivariate formulation exhibits greater robustness to competition-related issues compared to the univariate contra	×	0.01
Table 2 presents experimental results comparing base models and their variants trained with InF-Embed on multiple instru	✓	0.16
The benchmarks used for evaluation include Robust04, News21, Core17, and FollowIR.	×	0.02
FollowIR-7B has a parameter count of 50.7K and a training data size of 5.9M.	×	0.07
Promptriever (2025) is evaluated on KILT, BEIR, MTEB, InstructIR, FollowIR, Bright, MAIR, InfoSearch, and IFIR benchmark	×	0.01
Adding InF-Embed to e5-base-v2 results in a performance change of -6.7 on one of the reported metrics.	×	0.04
Adding InF-Embed to ModernBERT-base results in a performance score of 44.8 on one of the reported metrics.	×	0.04
The frequency of N-gram APS inter-sample is plotted for FollowIR, Promptriever, and InF-IR across Instruction, Query, an	×	0.14

References

- http://arxiv.org/abs/2505.21439v1
- http://arxiv.org/abs/2411.15497v3
- http://arxiv.org/abs/2405.11724v2