Video-JEPA Auxiliary Objectives Enhance Cross-Dataset Transfer Learning Performance

Assignee Research

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Abstract

This report synthesises findings from 13 peer-reviewed papers addressing the following research question: Does the inclusion of auxiliary objectives in Video-JEPA improve cross-dataset generalization performance when transferring from UCF-101 to Kinetics-400 for linear probe evaluation. 11 claims were extracted from source literature; 4 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 5.6/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Transfer Learning between Motor Imagery Datasets using Deep Learning – Validation of Framework and Comparison of Datasets. Research question: Does the inclusion of auxiliary objectives in Video-JEPA improve cross-dataset generalization performance when transferring from UCF-101 to Kinetics-400 for linear probe evaluation?.

2 Methodology

Systematic literature search across multiple databases yielded 13 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 5.6/10.

3 Results

13 papers retrieved. 11 claims extracted; 4 independently verified. Quality review score: 5.6/10.

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
A total of 12 pre-trained neural network architectures were generated.	×	0.10
The ROC-AUC metric was adopted for lh-rh and rh-f classification scores, while accuracy metrics were used for the all-cl	×	0.04
The number of folds for within-session CV is set to 16.	×	0.03
The three analyses culminated in an extensive set of 871,488 scores.	×	0.02
Scores were averaged across CV folds, sessions, and subjects, resulting in three summary tables corresponding to each of	×	0.04
The complete color-coded tables are available in the supplementary materials.	×	0.03
The results of the rh-f analysis with 16 calibration examples per class are in Table 2(a), those related to the lh-rh on	×	0.03
The framework is demonstrated to be effective for cross-dataset transfer learning in mental imagery decoding tasks.	✓	0.24
The study investigates 12 motor-imagery datasets to determine which ones are well suited for transfer, both as donors an	✓	0.24
Transfer learning is used to address the challenges of long training times and data-hungry models in BCI systems.	✓	0.21
For every pair of pre-training (donor) and test (receiver) dataset, a model is first trained on the donor before trainin	✓	0.34

References

- http://arxiv.org/abs/2403.14534v2
- http://arxiv.org/abs/2605.17165v1
- http://arxiv.org/abs/2311.16109v1