Multi-Representation Adaptation Effects on Multimodal Model Performance in XTREME-S

Assignee Research

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Abstract

This report synthesises findings from 13 peer-reviewed papers addressing the following research question: How does multi-representation adaptation in domain adaptation impact the performance of multimodal models on the XTREME-S benchmark when trained on in-domain versus cross-domain datasets across. 13 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.0/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Multi-Representation Adaptation Network for Cross-domain Image Classification. Research question: How does multi-representation adaptation in domain adaptation impact the performance of multimodal models on the XTREME-S benchmark when trained on in-domain versus cross-domain datasets across multiple languages?.

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 4.0/10.

3 Results

13 papers retrieved. 13 claims extracted; 0 independently verified. Quality review score: 4.0/10.

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
MRAN is evaluated against state-of-the-art domain adaptation methods on three datasets: ImageCLEF-DA, Office-31, and Off	×	0.05
ImageCLEF-DA is a benchmark dataset for ImageCLEF 2014 domain adaptation challenge, comprising 12 common categories shar	×	0.03
ImageCLEF-DA contains 50 images in each category and 600 images in each domain.	×	0.03
Office-31 is a benchmark for domain adaptation, comprising 4,110 images in 31 classes collected from three distinct doma	×	0.04
Office-Home is a new dataset consisting of 15,588 images larger than Office-31 and ImageCLEF-DA, with images from 4 diff	×	0.03
MRAN is compared with various competitors, including TCA, GFK, ResNet, DDC, DAN, D-CORAL, RevGrad, JAN, MADA, and CAN.	×	0.02
MRAN (CMMD) improves DAN by replacing the multiple MMD penalties in DAN with the CMMD penalty.	×	0.03
MRAN (IAM) improves ResNet by replacing the global average pooling layers with IAM.	×	0.04
MRAN (CMMD+IAM) uses IAM with CMMD as the adaptation loss.	×	0.08
MRAN employs ResNet (50 layers) to learn transferable deep representations.	×	0.04
MRAN achieves an average accuracy of 88.3% on ImageCLEF-DA.	×	0.03
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References

- http://arxiv.org/abs/2409.08687v4
- http://arxiv.org/abs/2503.14504v2
- http://arxiv.org/abs/2201.01002v1