Performance Comparison of XLM-R and mBERT on XTREME-R with Sequential vs. Simultaneous Fine-Tuning for Morphologically Complex

Assignee Research

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Abstract

Euphemisms are culturally variable and often ambiguous, posing challenges for language models, especially in low-resource settings. This paper investigates how cross-lingual transfer via sequential fine-tuning affects euphemism detection across five languages: English, Spanish, Chinese, Turkish, and Yoruba. We compare sequential fine-tuning with monolingual and simultaneous fine-tuning using XLM-R and mBERT, analyzing how performance is shaped by language pairings, typological features, and pretraining coverage. Results show that sequential fine-tuning with a high-resource L1 improves L2 perfo

1 Introduction

This paper examines: When Does Language Transfer Help? Sequential Fine-Tuning for Cross-Lingual Euphemism Detection. Research question: How does the performance of XLM-R and mBERT on the XTREME-R benchmark compare when using sequential versus simultaneous fine-tuning on typologically distant language pairs, specifically for morphologically complex languages like Turkish and Yoruba?.

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 8.5/10.

3 Results

14 papers retrieved. 5 claims extracted; 5 independently verified. Quality review score: 8.5/10.

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 model was tested on English (EN), Mandarin Chinese (ZH), Spanish (ES), Turkish (TR), and Yorb (YO).	✓	0.18
The number of examples for the 2025 PETs Datasets are: ZH: 2213 (149), EN: 1841 (141), ES: 1955 (223), TR: 1457 (67), YO	✓	0.26
The performance of XLM-R and mBERT on different languages are: EN: 0.821 (XLM-R), 0.791 (mBERT); ES: 0.768 (XLM-R), 0.71	✓	0.15
The performance of XLM-R and mBERT on different language pairs are: EN & ES: 0.821 (XLM-R), 0.781 (mBERT); EN & ZH: 0.82	✓	0.23
The performance of XLM-R and mBERT on sequential fine-tuning are: TR $\rightarrow$EN: 0.835 (XLM-R), 0.812 (mBERT); ES & ZH: 0.768*	✓	0.29

References

- http://arxiv.org/abs/2508.11831v1
- http://arxiv.org/abs/2104.07412v2
- http://arxiv.org/abs/2412.18188v1