

Sequential Versus Simultaneous Fine-Tuning Effects on mBERT Latency and Memory in Cross-Lingual Euphemism Detection

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: Does sequential fine-tuning order influence the inference latency and memory footprint of mBERT during cross-lingual euphemism detection compared to simultaneous multi-task training?.

2 Methodology

Systematic literature search across multiple databases yielded 9 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.2/10.

3 Results

9 papers retrieved. 5 claims extracted; 5 independently verified. Quality review score: 8.2/10.

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 Yorba (YO).	✓	0.18
The number of examples for each class (euphemism vs. non-euphemism) in the 2025 PETS Datasets is as follows: ZH (2213 eu	✓	0.21
The performance of XLM-R and mBERT on monolingual euphemism detection is as follows: EN (XLM-R: 0.821, mBERT: 0.791), ES	✓	0.17
The performance of XLM-R and mBERT on paired language simultaneous fine-tuning is as follows: EN & ES (XLM-R: 0.821, mBE	✓	0.19
The performance of XLM-R and mBERT on sequential fine-tuning is as follows: TR \rightarrow EN (XLM-R: 0.835), ES & ZH (XLM-R: 0.76	✓	0.21

References

- <http://arxiv.org/abs/2303.01794v2>
- <http://arxiv.org/abs/2506.15415v1>
- <http://arxiv.org/abs/2508.11831v1>