

Sequential vs. Simultaneous Fine-Tuning in XTREME-R: Zero-Shot Accuracy Degradation on Morphologically Complex Languages

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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: To what extent does sequential fine-tuning on typologically distant language pairs degrade zero-shot accuracy on the XTREME-R benchmark compared to simultaneous multilingual fine-tuning when evaluated on morphologically complex languages like Turkish and Yoruba?.

2 Methodology

Systematic literature search across multiple databases yielded 16 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.0/10.

3 Results

16 papers retrieved. 6 claims extracted; 5 independently verified. Quality review score: 8.0/10.

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
The model is tested on English (EN), Mandarin Chinese (ZH), Spanish (ES), Turkish (TR), and Yorb (YO) after sequential	✓	0.20
The sequential fine-tuning approach involves learning the same task first on one language (L1) and then on a second lang	×	0.13
The number of examples for euphemism (Euph) and non-euphemism (Non-Euph) in the 2025 PETs Datasets are as follows: ZH (2	✓	0.21
The performance of XLM-R and mBERT models on different languages are as follows: EN (XLM-R: 0.821, mBERT: 0.791), ES (XL	✓	0.17
The performance of XLM-R and mBERT models on different language pairs are as follows: EN & ES (XLM-R: 0.821, mBERT: 0.80	✓	0.18
The performance of XLM-R and mBERT models on sequential fine-tuning for different language pairs are as follows: TR $\rightarrow$ EN	✓	0.22

References

- <http://arxiv.org/abs/2109.13724v1>
- <http://arxiv.org/abs/1909.09587v1>
- <http://arxiv.org/abs/2508.11831v1>