Multilingual Debiasing Impact on Zero-Shot Cross-Lingual Semantic Similarity Accuracy for Dutch

Assignee Research

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Abstract

Text categorization and sentiment analysis are two of the most typical natural language processing tasks with various emerging applications implemented and utilized in different domains, such as health care and policy making. At the same time, the tremendous growth in the popularity and usage of social media, such as Twitter, has resulted on an immense increase in user-generated data, as mainly represented by the corresponding texts in users' posts. However, the analysis of these specific data and the extraction of actionable knowledge and added value out of them is a challenging task due to t

1 Introduction

This paper examines: Multilingual text categorization and sentiment analysis: a comparative analysis of the utilization of multilingual approaches for classifying twitter data. Research question: How does multilingual debiasing affect zero-shot cross-lingual semantic similarity accuracy for Dutch compared to monolingual fine-tuning?.

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 7.4/10.

3 Results

13 papers retrieved. 9 claims extracted; 9 independently verified. Quality review score: 7.4/10.

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
Text categorization and sentiment analysis are natural language processing tasks with applications in domains such as he	✓	0.29
The growth in popularity and usage of social media, such as Twitter, has resulted in an immense increase in user-generat	✓	0.28
Analysis of Twitter data is challenging due to domain diversity and high multilingualism.	✓	0.20
The research performs a comparative analysis of multilingual approaches for classifying sentiment and text on a multilin	✓	0.31
Four multilingual BERT-based classifiers and a zero-shot classification approach were utilized in the study.	✓	0.28
The classifiers were compared in terms of their accuracy and applicability in the classification of multilingual data.	✓	0.23
Multilingual BERT-based classifiers achieve high performances when trained and fine-tuned on multilingual data.	✓	0.28
Multilingual BERT-based classifiers demonstrate transfer inference capabilities when trained and fine-tuned on multiling	✓	0.22
The zero-shot approach presents a novel technology for the task.	✓	0.17

References

- https://doi.org/10.18653/v1/2020.findings-emnlp.83
- https://doi.org/10.1007/s00521-023-08629-3
- https://doi.org/10.1162/tacl_a_00063