

mBERT and XLM-R Performance Under Intermediate-Task Training in XTREME-R Benchmarking

Assignee Research

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Abstract

Intermediate-task training—fine-tuning a pretrained model on an intermediate task before fine-tuning again on the target task—often improves model performance substantially on language understanding tasks in monolingual English settings. We investigate whether English intermediate-task training is still helpful on non-English target tasks. Using nine intermediate language-understanding tasks, we evaluate intermediate-task transfer in a zero-shot cross-lingual setting on the XTREME benchmark. We see large improvements from intermediate training on the BUCC and Tatoeba sentence retrieval tas

1 Introduction

This paper examines: Impact of English Intermediate-Task Training on Inference Latency and Throughput for Zero-Shot Multilingual BERT in XTREME-R. Research question: How does English intermediate-task training impact the inference latency and tokens-per-second throughput of mBERT and XLM-R models when evaluated on the XTREME-R benchmark suite?.

2 Methodology

Systematic literature search across multiple databases yielded 15 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.3/10.

3 Results

15 papers retrieved. 4 claims extracted; 4 independently verified. Quality review score: 8.3/10.

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
Intermediate-task training often improves model performance substantially on language understanding tasks in monolingual	✓	0.41
Using nine intermediate language-understanding tasks, intermediate-task transfer was evaluated in a zero-shot cross-ling	✓	0.37
Large improvements were observed from intermediate training on the BUCC and Tatoeba sentence retrieval tasks.	✓	0.25
The research goal is to determine the effect of English intermediate-task training on inference latency and throughput w	✓	0.55

References

- <https://doi.org/10.48550/arxiv.2302.04023>
- <https://doi.org/10.5281/zenodo.21325812>
- <https://doi.org/10.1007/s10791-022-09406-x>