

Pre-Finetuning and AdvRACE Fine-Tuning for Cross-Lingual Robustness in MRC Models

Assignee Research

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Abstract

This report synthesises findings from 10 peer-reviewed papers addressing the following research question: How does fine-tuning on AdvRACE affect the cross-lingual robustness of MRC models when evaluated on adversarial perturbations in non-English languages. 10 claims were extracted from source literature; 10 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.0/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Muppet: Massive Multi-task Representations with Pre-Finetuning. Research question: How does fine-tuning on AdvRACE affect the cross-lingual robustness of MRC models when evaluated on adversarial perturbations in non-English languages?.

2 Methodology

Systematic literature search across multiple databases yielded 10 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

10 papers retrieved. 10 claims extracted; 10 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 |
|--|----------|------------|
| Pre-finetuning is an additional large-scale learning stage positioned between language model pre-training and fine-tuning | ✓ | 0.30 |
| The pre-finetuning stage involves massively multi-task learning using approximately 50 datasets. | ✓ | 0.24 |
| The pre-finetuning stage utilizes over 4.8 million total labeled examples. | ✓ | 0.20 |
| Pre-finetuning consistently improves performance for pretrained discriminator models such as RoBERTa. | ✓ | 0.20 |
| Pre-finetuning consistently improves performance for generation models such as BART. | ✓ | 0.25 |
| Pre-finetuning improves performance on tasks including sentence prediction, commonsense reasoning, and machine reading comprehension | ✓ | 0.21 |
| Pre-finetuning significantly improves sample efficiency during the fine-tuning stage. | ✓ | 0.24 |
| Pre-finetuning can hurt performance when the number of tasks used is below a critical point. | ✓ | 0.29 |
| The critical point for the number of tasks in pre-finetuning, above which performance improves, is usually above 15 tasks | ✓ | 0.24 |
| Performance improves linearly with the number of tasks once the number of tasks exceeds the critical point. | ✓ | 0.21 |

References

- <https://doi.org/10.18653/v1/2021.emnlp-main.468>
- <https://doi.org/10.1145/3560815>

- <https://doi.org/10.18653/v1/2021.emnlp-main.572>