

# Multilingual Pretraining Data Scaling for Robust Low-Resource Retrieval in the WebFAQ Benchmark

Assignee Research

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## Abstract

We present WebFAQ, a large-scale collection of open-domain question answering datasets derived from FAQ-style schema.org annotations. In total, the data collection consists of 96 million natural question-answer (QA) pairs across 75 languages, including 47 million (49%) non-English samples. WebFAQ further serves as the foundation for 20 monolingual retrieval benchmarks with a total size of 11.2 million QA pairs (5.9 million non-English). These datasets are carefully curated through refined filtering and near-duplicate detection, yielding high-quality resources for training and evaluating multil

## 1 Introduction

This paper examines: WebFAQ: A Multilingual Collection of Natural Q&A Datasets for Dense Retrieval. Research question: Does increasing the scale of multilingual pretraining data improve robustness against domain shift in low-resource language retrieval tasks within the WebFAQ benchmark?.

## 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 7.7/10.

## 3 Results

10 papers retrieved. 21 claims extracted; 19 independently verified. Quality review score: 7.7/10.

## 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
WebFAQ is a multilingual collection of natural Q&A datasets for dense retrieval.	✓	0.31
WebFAQ is evaluated in a zero-shot setting for multilingual retrieval benchmarks.	✓	0.20
WebFAQ is used to construct QA-aligned bilingual corpora spanning over 1000 language pairs.	✓	0.21
WebFAQ uses state-of-the-art bitext mining and automated LLM-assessed translation evaluation.	✓	0.21
WebFAQ’s bilingual corpora demonstrate higher translation quality compared to similar datasets.	✓	0.24
WebFAQ and all associated resources are publicly available on GitHub and HuggingFace.	✓	0.21
Dataset-specific fine-tuning is applied to an in-domain pretrained XLM-RoBERTa model using WebFAQ data.	✓	0.25
The fine-tuned model achieves substantial performance gains, which generalize to other multilingual retrieval datasets.	✓	0.23
Dense retrieval models benefit from exposure to WebFAQ data, leading to a concrete increase of model performance in open	✓	0.27
WebFAQ constructs 1k bilingual datasets containing a total of 1.5 million aligned QAs.	✓	0.19
Each of the 1001 language pairs in WebFAQ comprises at least 100 QA pairs.	×	0.10
WebFAQ’s aligned text sequences exhibit high translation quality, even when compared to human-curated bitext datasets.	✓	0.21
WebFAQ builds upon the efforts of the Web Data Commons (WDC) project.	×	0.09
WebFAQ utilizes QA pairs extracted from Common Crawl.	✓	0.20
CCQA comprises approximately 55M unique QAs, including 24M English samples, gathered from 13 distinct web snapshots.	✓	0.27
Huber et al. demonstrated the effectiveness of CCQA for in-domain pre-training on tasks such as Closed-Book Question Ans	✓	0.28
WebFAQ uses state-of-the-art bitext mining techniques and automated LLM-based translation evaluation.	✓	0.20
Kocmi et al. introduce GEMBA, a GPT-based metric for translation evaluation, demonstrating that LLMs can assess translat	✓	0.24
WMT 2019 is a massive dataset of 124M bitext pairs spanning nine language combinations.	✓	0.22
Tatoeba is a community-driven collection of sentences and their translations provided in a multitude of languages.	✓	0.17
BUCC 2018 contains 25k bitext pairs in four lan	✓	0.15

## References

- <http://arxiv.org/abs/1811.08772v1>
- <http://arxiv.org/abs/2602.17327v1>
- <http://arxiv.org/abs/2502.20936v1>