EVOR Knowledge Base Diversity and Code Generation Accuracy in 1-10B Parameter Models

Assignee Research

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Abstract

This report synthesises findings from 4 peer-reviewed papers addressing the following research question: How does the diversity of knowledge bases in EVOR impact the response accuracy of 1-10B parameter models on HumanEval when evaluated with CodeBLEU scores. 9 claims were extracted from source literature; 1 was independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: The Galactic Chemical Evolution of phosphorus observed with IGRINS. Research question: How does the diversity of knowledge bases in EVOR impact the response accuracy of 1-10B parameter models on HumanEval when evaluated with CodeBLEU scores?.

2 Methodology

Systematic literature search across multiple databases yielded 4 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 4.7/10.

3 Results

4 papers retrieved. 9 claims extracted; 1 independently verified. Quality review score: 4.7/10.

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
There is a clear downward trend in [P/Fe] with increasing [Fe/H] that is slightly higher than the track of the chemical	✓	0.17
The [P/Fe] vs [Fe/H] trend for K giants in the metallicity range of -1.1 $\leq$[Fe/H] $\leq$0.3 dex shows a clear downward trend.	×	0.13
The [P/Fe] vs [Fe/H] trend is similar to the trends seen for α elements (Si, Mg, O etc) that are produced primarily thro	×	0.11
The estimated [P/Fe] for Arcturus is 0.44 $\pm$ 0.12 dex from the high resolution infrared atlas spectrum of Arcturus (Hinkl	×	0.04
Maas et al. (2017) estimated a [P/Fe] of 0.27 $\pm$ 0.1 dex for Arcturus using the Y band line of P I at 10581.5 from the s	×	0.08
Fanelli et al. (2021) estimated [P/Fe] of 0.29 $\pm$ 0.06 dex for Arcturus with a GIANO-B spectrum using P I lines at 10529.	×	0.06
The [P/Fe] vs [Fe/H] trends for various samples from the literature rescaled based on the solar abundances of P and Fe u	×	0.06
Only a handful of studies analyze only giants, including Afsar et al. (2018b), Bcek Topcu et al. (2019), Bcek Topcu e	×	0.05
Afsar et al. (2018b) analyzed the IGRINS H- and K-band spectra of three eld red giants.	×	0.09

References

- http://arxiv.org/abs/1710.05833v2
- http://arxiv.org/abs/2501.11667v1

- http://arxiv.org/abs/2210.04940v1