

Preserving Out-of-Domain Word Analogy Performance with Static Vector Reduction

Assignee Research

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Abstract

Human knowledge provides a formal understanding of the world. Knowledge graphs that represent structural relations between entities have become an increasingly popular research direction toward cognition and human-level intelligence. In this survey, we provide a comprehensive review of the knowledge graph covering overall research topics about: 1) knowledge graph representation learning; 2) knowledge acquisition and completion; 3) temporal knowledge graph; and 4) knowledge-aware applications and summarize recent breakthroughs and perspective directions to facilitate future research. We propose

1 Introduction

This paper examines: A Survey on Knowledge Graphs: Representation, Acquisition, and Applications. Research question: To what extent does reducing contextualized representations to static vectors preserve performance on out-of-domain word analogy tasks compared to full contextual attention mechanisms?.

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 8.8/10.

3 Results

13 papers retrieved. 8 claims extracted; 8 independently verified. Quality review score: 8.8/10.

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
Knowledge graphs that represent structural relations between entities have become an increasingly popular research direction	✓	0.38
The survey covers overall research topics about: 1) knowledge graph representation learning; 2) knowledge acquisition and	✓	0.41
The survey proposes a full-view categorization and new taxonomies on knowledge graph topics.	✓	0.21
Knowledge graph embedding is organized from four aspects: representation space, scoring function, encoding models, and a	✓	0.35
For knowledge acquisition, especially knowledge graph completion, embedding methods, path inference, and logical rule re	✓	0.39
The survey explores several emerging topics, including metarelational learning, commonsense reasoning, and temporal know	✓	0.32
The survey provides a curated collection of data sets and open-source libraries on different tasks.	✓	0.24
The survey provides a thorough outlook on several promising research directions.	✓	0.20

References

- <https://doi.org/10.1109/tpami.2010.147>
- https://doi.org/10.1207/s15516709cog2202_1
- <https://doi.org/10.1109/tnnls.2021.3070843>