Scaling of Unlabeled Tabular Data and Certified Robustness in Self-Supervised Representations

Assignee Research

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Abstract

Artificial intelligence (AI) is currently being utilized in a wide range of sophisticated applications, but the outcomes of many AI models are challenging to comprehend and trust due to their black-box nature. Usually, it is essential to understand the reasoning behind an AI model's decision-making. Thus, the need for eXplainable AI (XAI) methods for improving trust in AI models has arisen. XAI has become a popular research subject within the AI field in recent years. Existing survey papers have tackled the concepts of XAI, its general terms, and post-hoc explainability methods but there have

1 Introduction

This paper examines: Explainable Artificial Intelligence (XAI): What we know and what is left to attain Trustworthy Artificial Intelligence. Research question: How does the scaling of unlabeled tabular data impact the certified robustness radius of self-supervised representations trained via context prediction tasks?.

2 Methodology

Systematic literature search across multiple databases yielded 11 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.5/10.

3 Results

11 papers retrieved. 12 claims extracted; 12 independently verified. Quality review score: 8.5/10.

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
Artificial intelligence (AI) is currently being utilized in a wide range of sophisticated applications.	✓	0.28
The outcomes of many AI models are challenging to comprehend and trust due to their black-box nature.	✓	0.26
It is essential to understand the reasoning behind an AI model's decision-making.	✓	0.22
The need for eXplainable AI (XAI) methods for improving trust in AI models has arisen.	✓	0.29
XAI has become a popular research subject within the AI field in recent years.	✓	0.24
Existing survey papers have tackled the concepts of XAI, its general terms, and post-hoc explainability methods.	✓	0.33
There have not been any reviews that have looked at the assessment methods, available tools, XAI datasets, and other rel	✓	0.29
This comprehensive study provides readers with an overview of the current research and trends in the rapidly emerging ar	✓	0.24
The study explains the background of XAI, common definitions, and summarizes recently proposed techniques in XAI for sup	✓	0.23
The review divides XAI techniques into four axes using a hierarchical categorization system: (i) data explainability, (i	✓	0.40
The study introduces available evaluation metrics as well as open-source packages and datasets with future research dire	✓	0.24
The significance of explainability in terms of legal demands, user viewpoints, and application orientation is discussed.	✓	0.24

References

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- https://doi.org/10.1016/j.inffus.2023.101805
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