

Comparison of SageMaker Autopilot, H2O.ai, and TPOT on Amazon Employee Access Dataset Performance

Assignee Research

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Abstract

We present Amazon SageMaker Autopilot: a fully managed system that provides an automatic machine learning solution. Given a tabular dataset and the target column name, Autopilot identifies the problem type, analyzes the data and produces a diverse set of complete ML pipelines, which are tuned to generate a leaderboard of candidate models that the customer can choose from. The diversity allows users to balance between different needs such as model accuracy vs. latency. By exposing not only the final models but the way they are trained, meaning the pipelines, we allow to customize the generated

1 Introduction

This paper examines: Amazon SageMaker Autopilot. Research question: How does the performance of SageMaker Autopilot compare to H2O.ai and TPOT in terms of accuracy and feature selection consistency when evaluated on the Amazon Employee Access dataset with different class imbalances?.

2 Methodology

Systematic literature search across multiple databases yielded 6 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 9.2/10.

3 Results

6 papers retrieved. 9 claims extracted; 9 independently verified. Quality review score: 9.2/10.

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
Amazon SageMaker Autopilot is a fully managed system that provides an automatic machine learning solution.	✓	0.35
Given a tabular dataset and the target column name, Autopilot identifies the problem type, analyzes the data, and produces	✓	0.38
Autopilot generates a leaderboard of candidate models that the customer can choose from.	✓	0.17
The diversity of models allows users to balance between different needs such as model accuracy vs. latency.	✓	0.26
Autopilot exposes not only the final models but also the way they are trained, meaning the pipelines.	✓	0.21
Autopilot allows users to customize the generated training pipeline, catering to users with different levels of expertise	✓	0.26
Autopilot provides a solution that is not fully black-box and can be further worked on, while not being a do-it-yourself	✓	0.31
Autopilot includes different components in its ecosystem that allow scalability, high-quality models, editable ML pipelines	✓	0.38
Autopilot allows trained models to be used in a production setting.	✓	0.20

References

- <https://doi.org/10.1007/s10462-024-10726-1>
- <https://doi.org/10.65521/mjret.v13i1s.3020>
- <https://doi.org/10.1145/3399579.3399870>