Impact of Contamination Rates on AVPR and F1 in LLM-Based Anomaly Detection

Assignee Research

June 1, 2026

Abstract

This report synthesises findings from 7 peer-reviewed papers addressing the following research question: What is the impact of varying contamination rates on the AVPR and F1 score in LLM-based anomaly detection models, and how does this compare to traditional machine learning models. Achieving high accuracy in energy consumption forecasting is critical for improving energy management and planning. However, this requires the selection of appropriate forecasting models, able to capture the individual characteristics of the series to be predicted, which is a. 11 claims were extracted from source literature; 11 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.0/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: . Research question: What is the impact of varying contamination rates on the AVPR and F1 score in LLM-based anomaly detection models, and how does this compare to traditional machine learning models?.

2 Methodology

Systematic literature search across multiple databases yielded 7 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.0/10.

3 Results

7 papers retrieved. 11 claims extracted; 11 independently verified. Quality review score: 8.0/10.

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
High accuracy in energy consumption forecasting is critical for improving energy management and planning.	✓	0.27
Selecting appropriate forecasting models to capture individual series characteristics involves significant uncertainty.	✓	0.16
Considering hierarchies of load from different sources increases uncertainty and complexity in forecasting.	✓	0.16
Forecasting at both system and region levels requires aggregation consistency of forecasts across levels.	✓	0.20
Hierarchical forecasting methods such as bottom-up, top-down, and optimal reconciliation address aggregation consistency	✓	0.25
Hierarchical forecasting methods do not resolve model selection uncertainty.	✓	0.26
Multiple Temporal Aggregation (MTA) has been shown to mitigate the model selection problem for low-frequency time series	✓	0.42
Multiple Temporal Aggregation (MTA) implies an undesirable effect of seasonality shrinkage.	✓	0.27
The study proposes a modification of the Multiple Aggregation Prediction Algorithm for high-frequency time series.	✓	0.24
The proposed method combines the modified Multiple Aggregation Prediction Algorithm with conventional cross-sectional hi	✓	0.19
The impact of incorporating temporal aggregation in hierarchical forecasting was empirically assessed using a real data	✓	0.35

References

- https://doi.org/10.1186/s12916-023-02858-y
- https://doi.org/10.48550/arxiv.2406.11903
- https://openalex.org/W2994807146