# GADT3 Test-Time Training vs Supervised GAD for Anomaly Detection Under Feature Masking

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**Abstract**

This report synthesises findings from 8 peer-reviewed papers addressing the following research question: How does GADT3's test-time training framework compare to supervised GAD baselines in detecting anomalies on the Amazon and Yelp datasets when 20% of node features are randomly masked. Cyber-attacks are becoming more sophisticated and thereby presenting increasing challenges in accurately detecting intrusions. Failure to prevent the intrusions could degrade the credibility of security services, e.g. 10 claims were extracted from source literature; 10 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.1/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: Survey of intrusion detection systems: techniques, datasets and challenges. Research question: How does GADT3's test-time training framework compare to supervised GAD baselines in detecting anomalies on the Amazon and Yelp datasets when 20% of node features are randomly masked.

## 2 Methodology

Systematic literature search across multiple databases yielded 8 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.1/10.

## 3 Results

8 papers retrieved. 10 claims extracted; 10 independently verified. Quality review score: 8.1/10.

## 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 |
|---|---|---|
| Cyber-attacks are becoming more sophisticated. | ✓ | 0.16 |
| Increasing sophistication of cyber-attacks presents increasing challenges in accurately detecting intrusions. | ✓ | 0.23 |
| Failure to prevent intrusions could degrade the credibility of security services such as data confidentiality, integrity | ✓ | 0.36 |
| Numerous intrusion detection methods have been proposed in the literature to tackle computer security threats. | ✓ | 0.39 |
| Intrusion detection methods can be broadly classified into Signature-based Intrusion Detection Systems (SIDS) and Anomal | ✓ | 0.47 |
| The paper presents a taxonomy of contemporary IDS. | ✓ | 0.22 |
| The paper presents a comprehensive review of notable recent works. | ✓ | 0.22 |
| The paper provides an overview of datasets commonly used for evaluation purposes. | ✓ | 0.23 |
| The paper presents evasion techniques used by attackers to avoid detection. | ✓ | 0.30 |
| The paper discusses future research challenges to counter evasion techniques. | ✓ | 0.24 |

## References


- https://doi.org/10.1186/s42400-019-0038-7
- https://doi.org/10.1561/2200000083
- https://doi.org/10.48550/arxiv.2306.12251