

Synthetic Tabular Data Fidelity Under Categorical Class Imbalance in GAN-Based Models

Assignee Research

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Abstract

This report synthesises findings from 16 peer-reviewed papers addressing the following research question: How does class imbalance in categorical features affect the fidelity of synthetic tabular data generated by GAN-based models when evaluated on downstream classifier accuracy across OpenML-CC18. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 6.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Diffusion and Flow Matching Models for Tabular Data: A Survey. Research question: How does class imbalance in categorical features affect the fidelity of synthetic tabular data generated by GAN-based models when evaluated on downstream classifier accuracy across OpenML-CC18 datasets?.

2 Methodology

Systematic literature search across multiple databases yielded 16 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 6.5/10.

3 Results

16 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 6.5/10.

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.

References

- <http://arxiv.org/abs/2407.21523v1>
- <http://arxiv.org/abs/2409.05215v1>
- <http://arxiv.org/abs/2502.17119v2>