

Surrogate Model Prediction Error and Synthesis Latency in HLS4ML Bit-Width Configurations

Assignee Research

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Abstract

This report synthesises findings from 4 peer-reviewed papers addressing the following research question: What is the correlation between surrogate model prediction error and actual synthesis latency for varying bit-width configurations in hls4ml workflows. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: wa-hls4ml: A Benchmark and Surrogate Models for hls4ml Resource and Latency Estimation. Research question: What is the correlation between surrogate model prediction error and actual synthesis latency for varying bit-width configurations in hls4ml workflows?.

2 Methodology

Systematic literature search across multiple databases yielded 4 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 4.7/10.

3 Results

4 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 4.7/10.

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/2512.18071v1>
- <http://arxiv.org/abs/1612.04126v1>
- <http://arxiv.org/abs/2511.05615v1>