CodeT5 Vulnerability Detection: IDE Integration vs Standalone Performance Trade-offs

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Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: How does the integration of CodeT5-based vulnerability detection into IDE environments compare to standalone processing in terms of token-level latency and GPU memory utilization when evaluated on. Texture analysis plays an important role in many image processing applications to describe the image content or objects. On the other hand, visual surface defect detection is a highly research field in the computer vision. 7 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 3.0/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: A New Benchmark Dataset for Texture Image Analysis and Surface Defect Detection. Research question: How does the integration of CodeT5-based vulnerability detection into IDE environments compare to standalone processing in terms of token-level latency and GPU memory utilization when evaluated on the CodeT5-Python dataset with varying sequence lengths?.

2 Methodology

Systematic literature search across multiple databases yielded 14 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 3.0/10.

3 Results

14 papers retrieved. 7 claims extracted; 0 independently verified. Quality review score: 3.0/10.

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
The benchmark dataset includes 5 samples each for Hatchet, Creamy Travertine, Marble, and Orange Travertine classes.	×	0.09
The dataset is divided into a train set with 5 defect-less samples and a test set with 10 defected samples for each clas	×	0.06
The 1DLBP descriptor achieves an average accuracy of 95.83% across the four classes.	×	0.01
The MLBP16,2 descriptor achieves an average accuracy of 93.45% across the four classes.	×	0.01
The 1DLBP + SSR descriptor achieves an average accuracy of 97.07% across the four classes.	×	0.01
The NrCLBP descriptor achieves an average accuracy of 96.47% across the four classes.	×	0.01
The MBP descriptor achieves an average accuracy of 91.26% across the four classes.	×	0.01

References

- http://arxiv.org/abs/1810.08137v3
- http://arxiv.org/abs/1910.09598v1
- http://arxiv.org/abs/1906.11561v1