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Blockchain-and ML based Malware Detection and
Integrity Checking: A Decentralized Approach

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Abstract—This review paper provides an overview of the current state of malware detection and integrity checking techniques, highlighting their limitations and challenges. The review then focuses on the use of blockchain technology and machine learning algorithms for malware detection and integrity checking. First, the paper provides a review of the use of blockchain technology for security purposes, highlighting its potential benefits in providing a secure and decentralized platform for malware detection and integrity checking. The paper then discusses the use of machine learning algorithms for malware detection, analysing the different approaches proposed in existing literature. The paper also discusses the limitations and challenges of these approaches, including the need for large datasets and the risk of false positives. The integration of machine learning algorithms enables the system to learn and adapt to new threats, improving its effectiveness over time. The review concludes with a discussion of future directions and emerging trends in blockchain-and ML based malware detection and integrity checking.

Keywords— NLP, Malware, Blockchain, CNN, Cloud, Integrity, Cryptography

Introduction

In recent years, malware attacks have become increasingly prevalent, sophisticated and pose a significant threat to the security of computer systems and networks. To address this challenge, researchers have developed various malware detection and integrity checking techniques, ranging from traditional signature-based methods to more advanced machine learning and blockchain-based approaches. While these techniques have been successful in detecting and preventing malware attacks, the ever-evolving nature of malware requires continued research and innovation to stay ahead of threats. This literature review will focus on the current state of malware detection and integrity checking techniques, specifically exploring the potential of a decentralized approach based on blockchain and machine learning. By decentralizing malware detection and integrity checking, blockchain technology can provide a transparent, secure, and tamper-proof environment for detecting and preventing malware attacks. Machine learning can also enhance the accuracy and effectiveness of malware detection by