

# **ASCSAS- AN AUTOMATED SMART CONTRACT AUDITING SYSTEM**

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## ABSTRACT

Over the past few years, smart contract development has been growing exponentially, leading to powerful decentralized applications utilized in many crucial high-value fields such as finance and asset transfer. Despite all these advantages, smart contracts can be vulnerable to exploits, which may result in substantial financial losses and hurt the overall blockchain ecosystem. As a result, the need for better security auditing systems for smart contracts has also risen. Existing security auditing tools lack scalability since they rely on predefined rules from experts or check for similar keywords to detect vulnerabilities making them less effective and causing high false detection rates.

ASCSAS helps bridge these gaps by utilizing deep ensemble learning techniques, improving the overall detection of vulnerabilities present in smart contracts. ASCSAS follows different feature engineering and feature selection techniques that have not been considered in current literature and the experimental studies conducted on different datasets prove that the proposed system approach will be able to perform multi-class classification for the various types of vulnerabilities present on smart contracts, demonstrating its overall effectiveness.

**Keywords :** Blockchain, Smart Contracts, Deep Learning, Ensemble Learning

### Subject Descriptors:

- Information systems → Information retrieval → Retrieval tasks and goals → Object Recognition systems
- Security and privacy → Software and application security
- Information systems → Information systems applications → Data mining
- Computing methodologies → Machine learning → Machine learning algorithms → Ensemble methods