DOI: doi.org/10.47363/JAICC/ICADCCS2026/2026(5)15

International Conference on AI, Data Science, Cybersecurity, Cloud Architectures, and Software Engineering

Conference Proceedings April 23, 2026 - (Virtual)

Blockchain-Enhanced AI: Securing Data Pipelines in Hybrid Cloud Environments

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Abstract

Blockchain-Enhanced AI: Securing Data Pipelines in Hybrid Cloud Environments: The data is vulnerable to tampering and breaches, which would completely undermine the accuracy of AI-driven insights, when running data pipelines in hybrid cloud setups.Blockchain Enhanced AI is a framework that combines the unchangeable records of blockchain technology with AI to check the accuracy of real-time data in multi-cloud systems. This can be done with the help of smart contracts that automatically flag anomalies, using sophisticated machine learning models such as LSTM networks. We can virtually eliminate the possibility of man-in-the-middle attacks by hashing the data blocks and validating them via consensus algorithms. In software engineering, the process streamlines the DevOps pipeline and reduces the risk of breaches by 30% on simulations in AWS and Azure. At the heart of the framework lies a robust core architecture and also includes privacy-preserving zero-knowledge proofs, and we've put this system to the test with empirical results in prototypes processing enormous petabyte-scale datasets. Attendees will be able to learn about the real-world implementation of this technology, challenges to scaling, and the ethical concerns around decentralized AI governance, and in doing so will help in developing more secure cloud-native applications.