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IMPROVING CLOUD SECURITY VIA AIDRIVEN CLOUD INFRASTRUCTURE AUTOMATION AND HUMAN-AI COLLABORATION IN IAM

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Abstract

This article investigates the integration of Artificial Intelligence (AI) and human collaboration in enhancing cloud security, with particular emphasis on Identity and Access Management (IAM) and infrastructure automation. The article examines how AI-driven systems reshape cloud security operations through advanced threat detection, dynamic access privilege management, and automated vulnerability analysis while maintaining crucial human oversight and decision-making capabilities. The article evaluated the effectiveness of human-AI collaborative frameworks across multiple dimensions, including security optimization, regulatory compliance, and operational Improving Cloud Security Via AI-Driven Cloud Infrastructure Automation and Human-AI Collaboration in IAM https://iaeme.com/Home/journal/IJCET 1735 editor@iaeme.com efficiency. The article findings demonstrate significant improvements in security metrics, including a reduction in threat detection time, continuous compliance achievement, and substantial enhancements in operational efficiency. The article reveals that the successful integration of AI capabilities with human expertise creates a more robust and adaptive security environment than either component alone. Key challenges in implementation are identified and developed practical solutions through structured training programs and systematic integration approaches. The article also provides insights into future research directions, particularly in areas of quantum computing applications and privacy-preserving AI techniques. The article findings contribute to the growing body of knowledge on human-AI collaboration in cloud security and offer practical guidelines for organizations seeking to enhance their security posture through integrated AI-human security frameworks.

Author Keywords

Human-AI Collaboration in Cloud Security, AI-Driven Identity and Access Management (IAM), Cloud Infrastructure Automation, Security Threat Detection and Prevention, Adaptive Access Control Systems.

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