

Advancing Privacy and Security Measures in Cloud Computing

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Abstract: *This paper dives into the role of Cloud Computing in today's technology-driven world, where it has become essential for scalable storage, powerful computation, and easy access to shared resources. Cloud platforms are transforming how we handle large amounts of data, making it possible to store, process, and optimize resources efficiently. The research highlights how Cloud Computing is driving innovation across different industries, improving both productivity and adaptability.*

The paper also tackles the pressing issues of data security and privacy in cloud systems. It breaks down common vulnerabilities and explains the potential risks, including their financial impact. To address these concerns, the study introduces a step-by-step approach using encryption and secure access methods to keep data safe in the cloud.

Finally, the research looks at current studies and future trends in Cloud Computing. It discusses exciting developments, like the integration of edge computing and AI-based resource management, and how these advancements are shaping the future of digital infrastructure.

Keywords: Cloud Computing, data security, resource optimization, scalability, future trends