

## RESEARCH ON METHODS FOR OPTIMIZING DISTRIBUTED COMPUTING BETWEEN EDGE AND CLOUD FOR IOT APPLICATIONS

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The Internet of Things (IoT) and the Industrial Internet of Things (IIoT) play a key role in scientific and technological innovation in the automatic monitoring and control system. This study discusses the optimization of distributed computing between edge and cloud computing in the application of the Internet of Things, with particular attention to the best practices and strategies in information security. By investigating the current status of IoT and industrial IoT technologies, the study emphasizes the importance of improving the processing capacity and security of these systems. Through a comprehensive study of security threats, vulnerabilities and encryption technologies, this study aims to address the impact of growing network security threats on data privacy and integrity [1 – 5].

Although there are many promising discoveries, there are still some challenges and limitations. First, the dynamic nature of the IoT environment makes it a challenge to accurately assess and adapt to changing security threats. In addition, resource constraints in edge devices may limit the implementation of strong security measures. In addition, ensuring compatibility and interoperability between various IoT devices and platforms remains a major challenge.

Future research should focus on enhancing security and efficiency in IoT applications. This can be achieved by developing dynamic security measures, designing lightweight security solutions for resource-constrained devices, promoting interoperability and standardization, integrating edge intelligence and machine learning, and exploring new privacy protection technologies. By addressing these research directions, future research aims to promote the latest progress in the security and distributed computing of IoT, promote the wide application of Internet of Things technology in various industries, and mitigate related security risks and challenges.

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