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IoT Security and Device Authentication

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Abstract: *The Internet of Things (IoT) connects billions of devices worldwide, enabling automation and efficiency in various domains such as healthcare, smart homes, industry, and transportation. However, the growing network of interconnected devices introduces severe security concerns, particularly in ensuring device authentication and maintaining the confidentiality, integrity, and availability of data. This paper explores the current state of IoT security, focusing on device authentication methods. We discuss existing authentication protocols, challenges faced by constrained IoT environments, and emerging techniques such as blockchain, AI-driven security, and lightweight cryptographic methods. The study aims to highlight research gaps and suggest future directions for developing robust, scalable, and efficient authentication mechanisms.*

Keywords: Internet of Things

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