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Application of Simon Encryption Algorithm for Data Transmission Between Sensor Nodes in IoT Environment
(2024) *Proceedings of the 9th International Conference on Mechatronics Engineering, ICOM 2024*, pp. 127-132.

DOI: 10.1109/ICOM61675.2024.10652287

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Abstract

As the number of Internet of Things (IoT) devices being connected to the internet continues to rise, the security of these devices is becoming an increasingly pressing concern. With the increasing number of IoT devices in homes, businesses, and industrial settings, the potential for cyber-attacks targeting these devices has also increased. Although there are many methods of ensuring network security in IoT, such as using encryption, firewalls, and intrusion detection systems, the issue of security is still not been fully solved. Data encryption is one of the most implemented cybersecurity solutions as it provide data protection from being stolen by unauthorized parties. This paper presents the design, simulation, and performance measurement of Simon encryption algorithm in IoT environment. Simon algorithm is a lightweight encryption algorithm which suitable for resource constraint environment like IoT devices. The performance metric used to measure the performance are time duration for a complete process and CPU utilization. In future work, the algorithm can still be optimized to offer better performance. As we are transitioning into fully digital environment, a robust cybersecurity solution is demanded. © 2024 IEEE.

Author Keywords

Algorithm; Cvbersecurity; Data; IoT; Transmission

Index Keywords

Bot (Internet), Cyber attacks, Network intrusion, Sensor nodes; Cvbersecurity, Cyber security, Cyber-attacks, Data, Data-transmission, Encryption algorithms, Industrial settings, Networks security, Performance, Pressung; Encryption algorithms

Funding details

Ministry of Higher Education, MalaysiaMOHEFRGS22-264-0873, FRGS/1/2022/ICT11/UIAM/01/1
Ministry of Higher Education, MalaysiaMOHE

This work is supported by the Ministry of Higher Education (MOHE) Fundamental Research Grant Scheme (FRGS22-264-0873) (Grant No: FRGS/1/2022/ICT11/UIAM/01/1).

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CRC Press

Publisher: Institute of Electrical and Electronics Engineers Inc.

Conference name: 9th International Conference on Mechatronics Engineering, ICOM 2024

Conference date: 13 August 2024 through 14 August 2024

Conference code: 202303

ISBN: 9798350349788

Language of Original Document: English

Abbreviated Source Title: Proc. Int. Conf. Mechatronics Eng., ICOM
2-s2.0-85204311711

Document Type: Conference Paper

Publication Stage: Final

Source: Scopus

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