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A Survey on Cryptography using Optimization algorithms in WSNs

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ABSTRACT

Objective: The main intent of this research is to provide the secure communication in the wireless sensor networks. For that, several cryptography using optimization algorithms is investigated. Methods: In this manuscript, a survey has been made on the cryptography using optimization methods for secure communication. Several optimization algorithms are presented for cryptography to create the keys for the encryption. One of the suggested techniques is ant Colony Optimization Key Generation based image encryption method that is used to create the keys for encryption of text. The ant colony optimization method is used to generate the keys for encryption. Results: This survey comprehensively studies the issues in the cryptographic optimization methods for providing security in the wireless sensor networks. The performance of the different methods is compared with various parameters such as maximum number of keys stored, battery capacity, and runtime. The maximum number of keys store in the Ant Colony Optimization is 52, for Novel stream cipher cryptosystem 256, for fast and secure stream cipher 256, and also for RC4 256 keys. Conclusion: This survey investigates the several cryptographic optimization methods for future work.

Keywords:

Cryptography, Encryption Algorithms, Information Security, Optimization Methods, Wireless Sensor Networks