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Locking Down Big Data: A Comprehensive Survey of Data Encryption Methods

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Abstract: *With the increasing volume of data being generated every day, the need for data security has become more crucial than ever. Encryption is one of the most effective techniques for protecting sensitive data from unauthorized access or theft. This comparative survey aims to provide a comprehensive analysis of different data encryption methods in the context of big data. The survey covers both traditional encryption techniques and newer, more advanced methods such as homomorphic encryption and quantum cryptography. The effectiveness, advantages, and limitations of each technique are examined, and a comparison of their performance in terms of speed, scalability, and security is presented. The study also explores the challenges and issues associated with implementing data encryption in big data environments. The findings of this survey will be useful for organizations seeking to secure their big data assets and for researchers interested in the latest developments in data encryption techniques.*

Keywords: Big data, Data encryption methods

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