Big Data Analytics and Data Security in the Cloud via Fully Homomorphic Encryption

Authors : Waziri Victor Onomza, John K. Alhassan, Idris Ismaila, Noel Dogonyaro Moses

Abstract : This paper describes the problem of building secure computational services for encrypted information in the Cloud Computing without decrypting the encrypted data; therefore, it meets the yearning of computational encryption algorithmic aspiration model that could enhance the security of big data for privacy, confidentiality, availability of the users. The cryptographic model applied for the computational process of the encrypted data is the Fully Homomorphic Encryption Scheme. We contribute theoretical presentations in high-level computational processes that are based on number theory and algebra that can easily be integrated and leveraged in the Cloud computing with detail theoretic mathematical concepts to the fully homomorphic encryption models. This contribution enhances the full implementation of big data analytics based cryptographic security algorithm.