Machine learning based multi scale parallel K-means++ clustering for cloud assisted internet of things

Journal:

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Abstract

Cloud assisted Internet of Things (CIoT) is the technology initiated towards the deployment of virtualization in wireless sensor networks (WSN). In the Recent times, parallel clustering routing schemes is the significant area of research to optimize energy and scalability problem in WSN on CIoT. In clustering schemes, Data collection, Aggregation and communication is the important activity which has been optimized through various conventional approaches which are not accounted to generate balanced clusters with optimum energy consumption and closer to corresponding cluster heads. In this research the novel Multi Scale Parallel K-means++ (MSPK++) clustering algorithm with balanced clustering has been proposed and improved further by applying machine learning techniques suitable for WSN on CIoT environment. The algorithm convergence has been proved globally and locally whereas the simulations are experimentally validated for the proposed algorithm in comparison with state of art algorithms in an acceptable complexity.