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Novel holistic architecture for analytical operation on sensory data relayed as cloud services

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Abstract

With increasing adoption of the sensor-based application, there is an exponential rise of the sensory data that eventually take the shape of the big data. However, the practicality of executing high end analytical operation over the resource-constrained big data has never being studied closely. After reviewing existing approaches, it is explored that there is no cost-effective schemes of big data analytics over large scale sensory data processing that can be directly used as a service. Therefore, the proposed system introduces a holistic architecture where streamed data after performing extraction of knowledge can be offered in the form of services. Implemented in MATLAB, the proposed study uses a very simplistic approach considering energy constrained of the sensor nodes to find that proposed system offers better accuracy, reduced mining duration (i.e. faster response time), and reduced memory dependencies to prove that it offers cost effective analytical solution in contrast to existing system.

Keywords: Analytics, Big data, Energy, Resources, Sensors

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