

A Smart Water Management Framework based on Big Data and IoT

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Abstract

Control of water quality is critical for water supply system. Traditional water quality control is based on samples-test-results paradigm, and actions are taken with respect to the results. The main problem with this method is that it can only provide passive information about water quality levels and there is always a delay effect to properly handle different situations. With recent development of Internet of Things (IoT) and Big Data Analytics (BDA) technologies, it becomes possible to collect and analyze large amount of data on different aspects for a water management system. In this way, a more proactive method of providing descriptive and predictive information can be implemented. This position paper presents some of our initial activities in building up a new smart water management framework based on BDA and IoT.

The proposed framework is an initiative driven by a consortium between Norway and India, consisting Big Data and Water Engineering researchers and practitioners both countries. In this paper, we briefly describe the background information on a typical water management process, then we propose the framework covering data acquisition, processing, feature selection, and analytics modeling. A preliminary SWOT analysis has been performed to evaluate the proposed framework.

Keywords: Big Data Analytics, Internet-of-Things, Smart Water Management.