

# Special Issue on Innovative Applications of Big Data and Cloud Computing

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## 1. Introduction

Big Data and Cloud Computing are two major information technologies for processing data to translate data to knowledge. In recent years, Big Data and Cloud Computing have been combined for various applications, i.e., core service design that combines Big Data and Cloud Computing, Big Data visualization in cloud environments, and cloud-based system implementation for processing Big Data. This Special Issue focuses on collecting innovative applications that utilize Big Data and Cloud Computing as their fundamental tools.

## 2. Innovative Applications of Big Data and Cloud Computing

This Special Issue presents a total of ten papers that include manufacturing proposals, bread-and-butter issues, information technologies, and scheduling approaches. Hsu et al. [1] present an information-extraction system using a computer vision technique to read the panel information in smart factories. Miao et al. [2] constructed a monitoring system for outdoor campuses to automatically detect their air and water quality. Lee et al. [3] discuss the relationship between the health and the intake of different types of nutrients and micronutrients. Kochovski et al. [4] report on QoS guarantees by considering an edge/fog computing approach and service-level agreements for IoT devices in manufacturing processes. Pogiatis and Samakovitis [5] present a pipeline architecture with event-driven extract, transform, and load processes to increase system performance in processing data. Chung et al. [6] propose a resource-allocation algorithm for heterogeneous resources to reduce resource wastage and improve system utilization. Sánchez-Carballido et al. [7] present an annotation-as-a-service design which provides annotations for autonomous driving videos. Park et al. [8] designed an approach for rapidly migrating the flash-cache in cloud computing to enhance the I/O workload. Jeon et al. [9] present an effective approach which monitors the resources of idle virtual machines and subsequently reassigns the machines to new jobs to increase resource utilization. Akhtar et al. [10] present a classification system which can identify whether a given fetus is large-for-gestational-age or not; this approach can improve the health of newborns.

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### 3. Future Action Recognition

Although the application window for this Special Issue has been closed, more innovative applications applying Big Data and Cloud Computing are continuously being applied to various issues, such as smart manufacturing, autonomous driving, pattern recognition, scheduling, and decision making. This Special Issue marks the beginning of collections presenting current innovative applications using Big Data and Cloud Computing. We hope that more novel ideas will be inspired by the articles in this Special Issue.

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