

Guest Editorial Preface

Special Issue on Bigdata Analytics in Practice

Ganesh Chandra Deka, Ministry of Skill Development and Entrepreneurship, Directorate General of Training, Shram Shakti Bhawan, Room N-329, New Delhi, India

Steven Walczak, School of Information, University of South Florida, Tampa, FL, USA

This special issue on “Bigdata Analytics in Business, Healthcare, and Governance,” attempts to analyze recent research advances in utilizing Bigdata to improve the performance of organizations, in business, healthcare, and government domains. Continuing advancements in technological capabilities for data storage and processing speeds have propelled Bigdata related research over the past decade. Three central questions concerning Bigdata remain: 1) how to classify Bigdata, 2) what are the best methods for appropriately sorting Bigdata, and 3) how to efficiently, accurately, and reliably analyze Bigdata. While various methods exist in attempting to answer these questions, no globally accepted methodology is recognized and accepted.

Bigdata is not a new problem, though it is exacerbated by the exponentially increasing volume of information technology devices, each of which produces data at an alarmingly increasing rate. The Internet of Things (IoT), which will have two special issues in the Journal of Organizational and End User Computing (JOEUC) next year, is forecast to produce over 50 billion data producing devices connected to the Internet by 2020 (Swan, 2012). Vast collections of data resources have existed throughout modern history. Two such examples are the National Library of the Czech Republic, headquartered in the Clementinum Building in Prague, which holds 6.5 million volumes and adds approximately 80 thousand new documents per year (NKP, 2013) and the United States Library of Congress which holds over 162 million items (LOC, 2016). Thus, having extremely large amounts of data to analyze is not a new problem, but technology facilitates access to extremely large data repositories.

Increased access to data via computer technology can especially be seen in the medical field. Dr. John Halamka (2015) reports that he deals with multiple petabytes of data daily. Bigdata is not just about the sheer volume of data available, but rather about being able to transform the data into knowledge and wisdom to improve decision making.

This JOEUC special issue on Bigdata Analytics contains 5 papers covering diverse aspects of Bigdata in Agriculture, Social Computing, and Healthcare. The first paper titled “IoT based Agriculture as a Cloud and Bigdata Service-The Beginning of Digital India” discusses the prospect of wireless sensor networking, Internet of Things (IoT), and Bigdata analytics usage in India. This paper proposes a universal Cloud-based autonomic information system for delivering Agriculture-as-a-Service (AaaS) through the use of Bigdata technologies. The second paper titled “Balance Resource Utilization (BRU) Approach for the Dynamic Load Balancing in Cloud Environment by using AR Prediction Model” is about the BRU approach for minimizing resource leakage to increase resource utilization as well

as optimizing the system's performance. The third paper titled "Sentiment Analysis of Tweets for Estimating Criticality and Security of Events" proposes a methodology to obtain a quantitative result to assess the level of threat for a public event. The author argues that the results they demonstrated can be used to understand people's opinions and comments with regard to specific events.

The last two papers of the special issue discuss big data applications in healthcare. The fourth paper titled "Internet of Things (IoT) solution for increasing the Quality of Life of Physically Challenged People" proposes a system to provide smart electronic aid for the visually impaired (VI) to complement their white cane using the principles of the IoT. A feedback system, which is a simple auditory circuit alarms the VI individual of any obstacle by transmitting the coordinates of the obstacle to a registered mobile number fed into an Android application. Finally, the fifth paper titled "A Methodical Healthcare Model to Eliminate Motion Artifacts from Big EEG Data" is about the removal of motion artifacts from electroencephalograms (EEG). Bigdata has a significant potential in medical applications. In this final research paper, the authors explain an algorithm they have developed for single channel EEG signal motion artifacts removal.

Thanks to Alon Freeman, part of the Data Science program in the School of Information at the University of South Florida, for his insights into the issues facing Bigdata research.

Ganesh Chandra Deka

Guest Editor

Steven Walczak

Editor-in-Chief

JOEUC

REFERENCES

Halamka, J. D. (2015). Using Bigdata to Make Wiser Medical Decisions. *Harvard Business Review online*. Retrieved from <https://hbr.org/2015/12/using-big-data-to-make-wiser-medical-decisions>

LOC. (2016). Fascinating Facts. Retrieved from <https://www.loc.gov/about/fascinating-facts/>

National Library of the Czech Republic. (2013). Basic documents, facts and figures. Retrieved from <http://www.en.nkp.cz/about-us/about-nl/basic-documents>

Swan, M. (2012). Sensor mania! the internet of things, wearable computing, objective metrics, and the quantified self 2.0. *Journal of Sensor and Actuator Networks*, 1(3), 217–253. doi:10.3390/jsan1030217