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# Epilogue: Summary and Outlook

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## ABSTRACT

*Open Journal of Big Data (OJBD) is an open access journal addressing aspects of Big Data, including new methodologies, processes, case studies, poofs-of-concept, scientific demonstrations, industrial applications and adoption. This editorial presents three articles in the second issue. The first paper is on Big Data in the Cloud. The second paper is on Statistical Machine Learning in Brain State Classification using EEG Data. The third article is on Data Transfers in Hadoop. OJBD has a rising reputation thanks to the support of research communities, which has helped us set up the First International Conference on Internet of Things and Big Data (IoTBD 2016), in Rome, Italy, between 23 and 25 April 2016. OJBD is published by RonPub (www.ronpub.com), which is an academic publisher of online, open access, peer-reviewed journals.*

## TYPE OF PAPER AND KEYWORDS

Editorial: *Open Journal of Big Data, OJBD, RonPub, open access, second issue*

## 1 INTRODUCTION

Open Journal of Big Data (OJBD) [12] is an open-access journal published by RonPub [13]. The journal covers a wide range of topics including big data science, frameworks, analytics, visualizations, recommendations and data-intensive research. OJBD [12] publishes high-quality, scholarly papers, which present new methodologies, processes, case studies, poofs-of-concept, scientific demonstrations, industrial applications and adoption relating to big data. The first issue of OJBD was published in July 2015.

There has been rapid development in Big Data services, which can be summed up as follows: Firstly, the growing quantity, size and variety of data make the management of data and disaster recovery more difficult than before. An innovative way to perform disaster recovery among Leeds, Southampton and London has been demonstrated [1], and the experiments have confirmed the efficiency of the proposed disaster recovery solution.

Secondly, a fair comparison between Cloud and non-Cloud has been performed to identify advantages and disadvantages of each platform for Big Data storage. The outcome of forty sets of experiments has demonstrated that Cloud Computing is the better platform for Big Data storage [2]. Thirdly, a survey of security based on 400 professionals' collective intelligence has confirmed that privacy is the most important factor and the threats from malicious files and viruses have caused the biggest problem in the last 12 months [3].

Fourthly, the use of multi-layered security has been shown to provide better protection for the data in the Cloud [4]. Under the experimental conditions, the use of NoSQL databases and multi-layered security were able to withstand ethical hacking attacks longer and better than conventional single-layered security and SQL-based databases [4][5]. Finally, a model, such as Organizational Sustainability Modeling

(OSM) [6] that can support the analysis and provide detailed explanations for different projects, is required to analyze risk and return for Big Data and Cloud Computing adoption.

## 2 CONTENT OF THE SECOND ISSUE

This is the second issue of Open Journal of Big Data (OJBD) [12]. It contains three articles.

This first article, "Big Data in the Cloud: A Survey" [11], surveys existing databases models to store and process Big Data within a Cloud environment. Particularly, the article details the following NoSQL databases: BigTable, Cassandra, DynamoDB, HBase, Hypertable, and MongoDB. The MapReduce framework and its developments Apache Spark, HaLoop, Twister, and other alternatives, such as Apache Giraph, GraphLab, Pregel and MapD - a novel platform that uses GPU processing to accelerate Big Data processing, are also analyzed. Finally, two case studies demonstrate the successful use of Big Data within Cloud environments and the challenges that must be addressed in the future.

The second article, "Statistical Machine Learning in Brain State Classification using EEG Data" [9] , discusses how to use a variety of machine learning methods, e.g., tree bagging, random forest, boost, support vector machine, and Gaussian mixture model, for building classifiers for electroencephalogram (EEG) data collected from different brain states and subjects. It discusses how training data size and the number of subjects that contribute to the training data affect misclassification rate. It discusses how sample entropy can contribute to building a classifier and shows that classification based on sample entropy gives the smallest misclassification rate. The results from two data sets collected from one channel and seven channels show that the more channels used, the less misclassification occurs. Together, these results show that it is feasible to build a self-adaptive classification system using EEG data to distinguish idle from active state.

The third article, "Data Transfers in Hadoop: A Comparative Study" [10], describes a state-of-the-art comparative study of tools commonly used for importing and exporting data. The results of the study could be used to inform decisions to select one tool over another, particularly for transfer of data to and from Hadoop systems. This article also discusses how Hadoop handles backup and disaster recovery along with posing some open research questions in terms of Big Data transfer in cloud-based services.

## 3 LOOKING FORWARD

Open Journal of Big Data (OJBD) [12] has been managed and reviewed by a board of international experts in Big Data and related areas, such as Cloud Computing, Internet of Things, Artificial Intelligence and Software Engineering. The quality of the papers, the management of the vigorous reviews and the impact to the international research communities have been and will be one of the best in Big Data. The Editor-in-Chief is Dr. Victor Chang, who has successfully blended international workshops and conferences with OJBD and other leading journals.

The senior editors of OJBD are Dr. Muthu Ramachandran, Dr. Robert John Walters and Dr. Gary Brian Wills, who have significant experience in research and development over 25 years. OJBD has a rising reputation thanks to the support of research communities. We have successfully hosted the second international workshop on Enterprise Security in Vancouver, Canada, between 30 November and 3 December 2015. We will set up the First International Conference on Internet of Things and Big Data (IoTBD 2016) in Rome, Italy, between the 23rd and 25th of April, 2016 [8]. We have the first International Conference on Complex Information Systems in Rome, Italy, between 22nd and 24th of April, 2016 [7].

Revised and extended versions of selected papers will be published in forthcoming special issues of OJBD. We always seek the best papers in different areas of Big Data and the best practices, recommendation, innovation, prototype, algorithms, large scale experiments and simulations and proofs-of-concept for Big Data. We look forward to meeting you in Rome!

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**Dr. Victor Chang** received his research MPhil from the University of Cambridge, UK and his PhD from University of Southampton, UK. He is a Senior Lecturer at Leeds Beckett University. He is the founding chair of two international workshops and one of which has been upgraded into an International Conference on Internet of Things and Big Data (IoTBD). He has over 80 peer-reviewed publications. He is the Editor-in-Chief of two journals, including Open Journal of Big Data (OJBD). He is an Editor of Future Generation Computer Systems (FGCS). He has successfully delivered many projects and services and has won several awards. He gave several keynote talks including CLOSER/WEBIST/ICTforAgeingWell 2015. He is regarded as a leading academic and practitioner in Cloud Computing and Big Data in Europe.

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