

## Guest Editorial Preface

# Special Issue on Big Data and Data Analytics Research: Challenging Data and Web Science for Next Generation High Performance Information Systems

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The Big Data Research has a great impact on the Computer Science domain as well as in many other scientific domains. The capacity of Big Data Analytics to inform new models for value delivery set technical and business challenges.

The main focus of the issue is the analysis of the contribution of the Semantic Web and Information Systems community to this scientific domain. We are happy that the selected paper provide a variety of complementary aspects of the phenomenon and promote its rich picture to the readers of the International Journal on Semantic Web and Information Systems.

### INSIDE THIS ISSUE

We, as guest editors provide a position paper on “Big Data and Data Analytics Research: From Metaphors to Value Space for Collective Wisdom in Human Decision Making and Smart Machines,” which is in fact a scientific approach to the new demanding business models for the exploitation of Big Data.

The second paper of the special issue entitled “Modelling Propagation of Public Opinions on Microblogging Big Data using Sentiment Analysis and Compartmental Models” is an excellent discussion for the challenges of Big Data Research in Social Networks and in the understanding of sentiments.

The third research paper is about “IoT-Based Big Data: From Smart City towards Super City Planning” and communicates significant research towards the Smart Cities Vision. We do believe that Smart cities will be a key research area for the realization of Big Data Research for improved quality of life and well being.

The next article entitled “Finding Healthcare Issues with Search Engine Queries and Social Network Data” is promoting the integration of Big Data Research in Bioinformatics. This is also a very interesting research area where Big Data Research will gain significant role in the near future.

The fifth research paper entitled “Harnessing Semantic Features for Large-Scale Content-Based Hashtag Recommendations on Microblogging Platforms” proposes a new algorithm for semantic annotation of recommendations.

The next article enlightens further the big agenda of Linked Data and it is entitled, “Automatic Schema-Independent Linked Data Instance Matching System.”

The seventh paper, “Multi-version Ontology-based Personalization of Clinical Guidelines for Patient-centric Healthcare,” enlightens further the Big Data Research in Healthcare domain and is dealing with significant issues currently posing inefficiencies in medical information systems.

The next article entitled “SPedia: A Central Hub for the Linked Open Data of Scientific Publications,” provides an excellent implementation of an Open Linked Data Research for scientific data.

Last but not least, the paper “Enabling Interoperability in the Internet of Things: A OSGi Semantic Information Broker Implementation” sets new challenges for the integration of Big Data and Internet of Things Research.

## **CONCLUSION**

The next five years will be critical for the evolution of Big Data Research. To the current enthusiasm about its potential capacity to support new business models, it is clear that it is time to envision a new era of maturity for the domain. For this it is required to investigate several opportunities for Interdisciplinary research and innovative thinking. We do believe that this special issue is an excellent opportunity to initiate a scientific dialogue for innovative thinking towards sustainable information systems and web science.

We are looking forward for your reflection to the published research of this issue.

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