

## 2<sup>nd</sup> International Workshop on Big Data, Smart Data and Semantic Technologies – BDS DST 2016

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In modern societies, almost every individual is using technology for entertainment, communication or business purposes. Depending on roles and goals, as well on the application domain, the variety of data people work with is becoming more and more complex. At the same time, the growing technical possibilities to gather and aggregate multi-modal data from sensors and different services allow for evidence-based information systems enabling both humans and machines to make well-informed decisions.

These large and complex data sets, commonly characterized by high data volume, high variety of the data types and data sources, high velocity of the incoming data and the expected information output (real-time requirement) as well as the uncertainty about the veracity of the data, are known as Big Data. These characteristics make it difficult to process the data using existing data management applications and traditional information technologies. On the other hand, when processed and analyzed properly, Big Data is transformed into “Smart” Data and might carry huge amounts of useful information, which was not accessible beforehand and allows for better-founded, more robust predictions and improved decision-making in almost any domain. That is why new predictive and prescriptive analytic approaches are continuously increasing in importance.

Besides new analytic approaches, novel information technologies such as semantic technologies are necessary in order to exploit the full potential of the gathered data. Unlike traditional information technology where the meaning of data and their relationships are predefined and “hard-wired” into data formats and applications, semantic technologies encode meanings explicitly and independent from concrete formats and application logic. This enables machines and people likewise to understand, share, and reason over semantically represented data. Semantic technologies provide an abstraction layer on top of existing ICT infrastructures and facilitate the interrelation and integration of data, content, and processes in meaningful ways, which is very important when dealing with high amounts of heterogeneous data.

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We believe that using Big and Smart Data as well as methods and tools based on semantic technologies will provide more transparency, enable precise and well-founded decisions and improve planning processes, which will result in more efficient and user-centric processes and systems.

We are happy that the submissions to BDSST 2016 reflect our sentiment and as they were innovative and from a wide variety of domains. Sixteen reviewers from eleven institutions, ranging from different fields of industry and research, selected the best submissions. In addition, we are pleased that submissions from ongoing projects of the technology program “Smart Data – Data Innovations” by the Federal Ministry for Economic Affairs and Energy in Germany have made it into the selected contributions of our workshop.

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