

3rd International Workshop on Big Data, Smart Data and Semantic Technologies

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The growing technical possibilities to gather and aggregate multi-modal data from sensors, mobile devices, social media, log files, cameras, microphones etc. have resulted in large and complex data sets, which today are known as Big Data, are 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, which makes it difficult to process the data using existing data management applications and traditional information technologies. On the other hand, when processed properly, Big Data might carry huge amounts of useful information, which was not accessible before and allow for better-founded, more robust predictions and better decision-making amongst others regarding environmental and energy aspects. That is why new predictive and prescriptive analytic approaches are gaining increasing importance.

Besides new analytic approaches, novel information technologies such as semantic technologies are necessary in order to exploit the maximum 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. We believe that using Big/Smart Data as well as methods and tools based on semantic technologies will provide more transparency, enable precise and well-founded decisions, which will result in more sustainable and efficient processes and systems in different application areas such as production, logistics, supply chain management, geo-information systems, smart services and others.

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