International Workshop on
Semantic Big Data (SBD 2016)
in conjunction with the 2016 ACM SIGMOD Conference in San Francisco, USA

Web: http://www.ifis.uni-luebeck.de/~groppe/sbd

AIMS OF THE WORKSHOP

The current World-Wide Web enables an easy, instant access to a vast amount of online information. However, the content in the Web is typically for human consumption, and is not tailored for machine processing. The Semantic Web is hence intended to establish a machine-understandable Web, and is currently also used in many other domains and not only in the Web. The World Wide Web Consortium (W3C) has developed a number of standards around this vision. Among them is the Resource Description Framework (RDF), which is used as the data model of the Semantic Web. The W3C has also defined SPARQL as the RDF query language, RIF as the rule language, and the ontology languages RDFS and OWL to describe schemas of RDF. The usage of common ontologies increases interoperability between heterogeneous data sets, and the proprietary ontologies with the additional abstraction layer facilitate the integration of these data sets. Therefore, we can argue that the Semantic Web is ideally designed to work in heterogeneous Big Data environments.

We define Semantic Big Data as the intersection of Semantic Web data and Big Data. There are masses of Semantic Web data freely available to the public - thanks to the efforts of the linked data initiative. According to http://stats.lod2.eu/ the current freely available Semantic Web data is approximately 90 billion triples in over 3,300 datasets, many of which are accessible via SPARQL query servers called SPARQL endpoints. Everyone can submit SPARQL queries to SPARQL endpoints via a standardized protocol, where the queries are processed on the datasets of the SPARQL endpoints and the query results are sent back in a standardized format. Hence, not only Semantic Big Data is freely available, but also distributed execution environments for Semantic Big Data are freely accessible. This makes the Semantic Web an ideal playground for Big Data research.

The goal of this workshop is to bring together academic researchers and industry practitioners to address the challenges and report and exchange the research findings in Semantic Big Data, including new approaches, techniques and applications, make substantial theoretical and empirical contributions to, and significantly advance the state of the art of Semantic Big Data.

TYPES OF PAPERS

The workshop solicits papers of different types:

- **Research Papers** propose new approaches, theories or techniques related to Semantic Big Data including new data structures, algorithms and whole systems. They should make substantial theoretical and empirical contributions to the research field.
- **Experiments and Analysis Papers** focus on the experimental evaluation of existing approaches including data structures and algorithms for Semantic Big Data and bring new insights through the analysis of these experiments. Results of Experiments and Analysis Papers can be, for example, showing benefits of well-known approaches in new settings and environments, opening new research problems by demonstrating unexpected behavior or phenomena, or comparing a set of traditional approaches in an experimental survey.
- **Application Papers** report practical experiences on applications of Semantic Big Data. Application Papers might describe how to apply Semantic Web technologies to specific application domains with big data demands like social networks, web search, e-business, collaborative environments, e-learning, medical informatics, bioinformatics and geographic information system. Application Papers might describe applications using linked data in a new way.
- **Vision Papers** identify emerging new or future research issues and directions, and describe new research visions having demands for Semantic Big Data. The new visions will potentially have great impacts on society.

TOPICS OF INTEREST

We welcome papers on the following topics:
- Semantic Data Management, Query Processing and Optimization in
  - Big Data
  - Cloud Computing
  - Internet of Things
  - Graph Databases
  - Federations
  - Spatial and Spatio-Temporal Data
- Evaluation strategies for Semantic Big Data of Rule-based Languages like RIF and SWRL
- Ontology-based Approaches for Modeling, Mapping, Evolution and Real-world ontologies in the context of Semantic Big Data
- Reasoning Approaches (Real-World Applications, Efficient Algorithms) especially designed for Semantic Big Data environments
- Linked Data
  - Integration of Heterogeneous Linked Data
  - Real-World Applications
  - Statistics and Visualizations

- – Quality
- – Ranking Techniques
- – Provenance
- – Mining and Consuming Linked Data
- Semantic Web stream processing (Dynamic Data, Temporal Semantics)
- Semantic Internet of Things
- Semantic Smart Homes/Companies/Cities
- Performance, Evaluation and Benchmarking of Semantic Web Technologies, Applications and Databases
- Semantic Web Services
- Semantic Big Data Archives
  - – Efficient Archiving and Preservation Techniques
  - – Evolution Representation
  - – Compression Approaches
  - – Querying Techniques
- Semantic Big Data on Emergent Hardware Technologies
  - – FPGA
  - – GPU
  - – SSD
  - – Main-Memory Databases

Workshop Chairs

- Sven Groppe, University of Lübeck, Germany
- Le Gruenwald, University of Oklahoma, USA

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- Dongyan Zhao, Peking University Beijing, China
- Xiang ZHAO, National University of Defense Technology, China
- Weiguo Zheng, Chinese University of Hong Kong, China
- Dimitrios Zissis, University of the Aegean, Greece
- Lei Zou, Peking University, China

Important Dates

Submission (extended):	February 29, 2016
Notification:	April 22, 2016
Workshop:	July 1, 2016

Submission

Authors are invited to submit original, unpublished research papers that are not being considered for publication in any other forum.

Manuscripts should be formatted using the camera-ready templates in the ACM proceedings double-column format. Papers cannot exceed 6 pages in length.

Accepted papers will be published online in the ACM digital library.

We describe manuscript preparation and submission procedure at http://www.ifis.uni-luebeck.de/~groppe/sbd/submit