Call for Contributions

Note: Onsite and Online Options
In order to accommodate a large number of situations, we are offering the option for either physical presence or virtual participation. We would be delighted if all authors manage to attend in person, but are aware that special circumstances are best handled by having flexible options.

Submission:
1. Inform the Chair: with the Title of your Contribution
2. Submission URL:
https://www.iariasubmit.org/conferences/submit/newcontribution.php?event=DBKDA+2020+Special
Please select Track Preference as **GraphSM**

Special Track

GraphSM: Large-scale Graph Analysis, Management and Applications

Chairs and Coordinators

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along with
DBKDA 2020,
The Twelfth International Conference on Advances in Databases, Knowledge, and Data Applications
September 27 - October 01, 2020 - Lisbon, Portugal
http://www.iaria.org/conferences2020/DBKDA20.html

Graphs have become a key technology in today's information processing and management. Examples are Google's Knowledge Graph, Yahoo's semantic search assistant tool Spark, Facebook's entity graph, YAGO, DBPedia, SemMedDB (a biomedical knowledge base), and the Linked Open Data (LOD) project with more than 32 giga triples. In these initiatives, various aspects of human knowledge are modeled as graphs: geospatial data, literature, data from biology, chemistry, astronomy, and other scientific fields.

Although there is consensus about representing data with nodes (vertices, objects) that are connected with edges (links), research about graphs is inhomogeneous and widely spread among different areas:
- *Existential graphs*, invented by C. S. Peirce in 1885 and fully implement first-order logic
- *Knowledge graphs,* which are widely discussed in the Semantic web community since 2012
- *Large heterogeneous information networks*, a term recently used in the knowledge discovery community to refer to graphs with different types of nodes
- *Social networks,* e.g., collaboration/friendship/citation networks; is one prominent application area that also prefers the term "network" over "graph"
- *Probabilistic graphical models*, e.g., Bayes networks, model the conditional dependence between nodes and are discussed in probabilistic theory since the 1980s and recently in machine learning
- *Triple stores and graph stores* are practical implementations with the ability to process large amounts of graph data, but often lack a schema-level or high semantic expressiveness

Since 2014, GraphSM annually brings together researchers and practitioners (e.g., from Yahoo, Neo4j) to exchange novel ideas and experience about the theory, modeling, analysis, management, and application of graphs / networks. In 2020, we especially welcome interdisciplinary contributions with the aim to exchange and mutually benefit from different research initiatives into graphs.

Prospective authors are invited to submit original papers on topics including, but not limited to:

THEORY
- Algebra and logic of graphs / networks
- Formalizations of graph databases
- Expressive power of graph query languages

DATA MODELLING
- Graph data modelling
- Comparison of graph data models to traditional data models
- Schemas for graph databases
- High-expressiveness graph data models like first-order logic, ontologies
- Semantic web graph data formats (e.g., RDF, OWL)

GRAPH MINING AND REPRESENTATION LEARNING
- Mining (knowledge discovery) and profiling of graphs
- Information retrieval on graph-structured data
- Graph pattern matching
- Link prediction, clustering, and node classification in graphs
- Automatic learning of graph embeddings
- Extraction of vectors, matrices, and metapaths from graphs (e.g., as input for neural networks)
- Graph data quality assessment

QUERY PROCESSING
- Search in graph databases
- Flexible query answering on graph-structured data
- Intelligent distribution of query processing
- Map-reduce and parallelization for graph processing

STORAGE MANAGEMENT
- Indexing methods for graph processing
- Storage systems for large-scale graph databases
- Automatic distribution and replication of graph databases
- Storage managers for specific graph applications

APPLICATIONS
- Biological and medical graph databases
- Social Networks graphs
- Visualizing, browsing and navigating graph data

Important Datelines
Submission: July 3, 2020
Notification: July 23, 2020
Registration: August 2, 2020
Camera ready: August 2, 2020

Contribution Types
- Regular papers [in the proceedings, digital library]
- Short papers (work in progress) [in the proceedings, digital library]
- Posters: two pages [in the proceedings, digital library]
- Posters: slide only [slide-deck posted on www.iaria.org]
- Presentations: slide only [slide-deck posted on www.iaria.org]
- Demos: two pages [posted on www.iaria.org]

Paper Format
- See: http://www.iaria.org/format.html
- Before submission, please check and comply with the editorial rules: http://www.iaria.org/editorialrules.html

Publications
- Extended versions of selected papers will be published in IARIA Journals: http://www.iariajournals.org
- Print proceedings will be available via Curran Associates, Inc.: http://www.proceedings.com/9769.html
- Articles will be archived in the free access ThinkMind Digital Library: http://www.thinkmind.org

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Paper Submission
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Registration
- Each accepted paper needs at least one full registration, before the camera-ready manuscript can be included in the proceedings.
Registration fees are available at http://www.iaria.org/registration.html

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