Information Systems Frontiers

CALL FOR PAPERS

Special issue on:

Breakthroughs on Cross-Cutting Data Management, Data Analytics and Applied Data Science

Over the last few years, research on database and information system technologies has been rapidly evolving thanks to the new paradigms of software and hardware adopted by modern scientific and more invasive applications. Presently, a huge and heterogeneous amount of data can be efficiently collected, integrated, stored, managed, and analyzed for novel and more interesting data-driven applications. The growing relevance of non-traditional domains such as bioinformatics, social networking, mobile computing, sensor applications, smart cities, and gaming are generating increasing quantities of data complex in contents, heterogeneous in formats and often order of Terabytes in amount. These novel domains result in articulate ecosystems that include areas such as human resources, business processes, processes of data and information, IoT, mobile equipment etc.

This scenario provides unprecedented opportunities to work on exciting problems, but also raises many new challenges for data management, storage, process and mining. Heterogeneous data collected from different sources should be adequately combined, integrated and stored to ensure efficient and effective data exploration and understanding. Moreover, while information sharing is essential in today's business and social networks, such sharing should not violate security and privacy requirements. Particular attention should also be devoted to the involvement of the end-user in the entire process to enhance her/his exploitation and understanding of data and knowledge as well as to make the user a valuable data provider. Data management and analytics solutions will perform better when users can interact with systems and the systems take account of the cognitive and physiological characteristics of the people involved to provide personalized data processing and analytics.

The aim of this special issue is to disseminate cutting-edge contributions from various application domains representing new trends in the far reaching research areas of databases, information systems and data analytics. The special issue is expected to include papers that span a wide range of topics in the field of data collection, integration, storage, mining, knowledge, and visualization, from methodological, technological and applied data science innovation aspects. Contributions in this special issue should be of interest to a large and varied cross-disciplinary audience of researchers and practitioners involved or interested from different perspectives in this topic. The special issue welcomes submissions of technical, experimental, methodological papers, application papers, and papers on experience reports in real-life domains.

Topics of interest include, but are not limited to:

- Research challenges on data management and analytics
- Methodologies, models, algorithms, and architectures for data science
- Big Data frameworks and architectures
- Data warehouses and large-scale databases
- NoSQL and NewSQL databases
- Metadata management
- Scalable and/or descriptive data mining algorithms
- Real-time analytics

- Machine learning and deep learning techniques for knowledge discovery
- Reinforcement learning models
- Cloud computing techniques for data science
- Crowdsourcing and collaborative analyses
- Personalization and recommendation techniques for Big and small Data
- Question answering techniques and systems
- Visualization methods for data-intensive applications
- Applied data science
- Experiences with data-driven project development and deployment

In one of – though not limited to – the following application scenarios:
- Bio-sciences and healthcare
- Internet of Things
- Urban economy and urban environments
- Financial applications
- Customer relationship management
- Agriculture
- Mobile applications
- e-commerce
- Business analytics and finance
- User-generated content (like tweets, micro-blog)
- Industry 4.0

Time scale

Submission Due: June 30th, 2019
1st Review Notification: September 30th, 2019
Revision Due: November 30th, 2019
Final Notification: December 30th, 2019

Submission guidelines

Paper submissions must conform to the Information Systems Frontiers format guidelines available at
http://www.springer.com/business/business+information+systems/journal/10796
Manuscripts must be submitted to the ISF-Springer online submission system at
http://www.editorialmanager.com/isfi and the authors need to select the special issue: "**Breakthroughs on Cross-Cutting Data Manag., Analytics, Applied Data Science"** during the submission process.
Submissions to this Special Issue must represent original material that has been neither submitted to, nor published in, any other journal. A submission based on one or more papers that appeared elsewhere should have at least 30% of novel valuable content that extends the original work (the original papers should be referenced and the novel contributions should be clearly stated in the submitted paper).

Guest editors

Silvia Chiusano (Politecnico di Torino, Torino, Italy)
Tania Cerquitelli (Politecnico di Torino, Torino, Italy)
Robert Wrembel (Poznan University of Technology, Poznań, Poland)
Daniele Quercia (Nokia Bell Labs, Cambridge, UK)

Guest Editors' Biography

Silvia Chiusano has been an Associate Professor of the Politecnico di Torino, Italy, since November 2014 and she is currently working at Interuniversity Department of Regional and Urban Studies and Planning. Her research interests focus on the design of innovative solutions for large-scale data management and mining with interest on health care, smart cities and healthy cities application domains. Silvia has published more than 90 scientific publications. She has served as referee for many international journals and served on the program committee of several international conferences and workshops on data mining research area. Silvia has been co-chair of the workshop track for the ADBIS 2018 conference and she has organized several international workshops in the last few years in conjunction with different international conferences. She organized three editions of the DARLI-AP workshop in conjunction with EDBT/ICDT Joint Conference [2018, 2019] and with the IEEE Smart Data conference [2017]. She has also organized the DAS workshop [2017] and BiDaTA Special Session on Big Data [2013] within the ADBIS conference. Silvia has been involved in many National and European research projects addressing different topics (e.g., citizen security, urban mobility) in the data mining research area. She is tenured of courses in database systems, data mining and business intelligence at Politecnico di Torino.

Tania Cerquitelli has been an Associate Professor at the Department of Control and Computer Engineering (DAUIN) of the Politecnico di Torino, Italy, since March 2018. Her research interests include self-learning methodologies and transparent data analytics, the design of innovative algorithms to perform large-scale data mining, novel and efficient data mining techniques for sensor readings, algorithms to extract high level abstraction of the mined knowledge (e.g., generalized patterns). Tania has been co-chair of the workshhop track for ADBIS 2018 and has organized a variety of international workshops in the last few years in conjunction with different international conferences (e.g., tree editions of the DARLI-AP workshop organized in conjunction with EDBT/ICDT Joint Conference [2018, 2019] and in conjunction with the 3rd IEEE Smart Data conference [2017]; four international workshops on Big data analytics and applied data science topics in conjunction with the ADBIS conference, editions 2013, 2015, 2016, 2017. Tania is the co-editor of a Springer book project titled "Transparent Data Mining for Big and Small Data" with Dr Daniele Quercia and Prof. Frank Pasquale. Tania has published more than 90 scientific publications; she has served as referee for many international journals and she has served on the program committee of several international conferences on data mining research area. Tania has been involved in many European and Italian research projects addressing different topics (e.g., energy efficiency, network traffic analysis, Internet platform, Industry 4.0) in the data mining research area. Tania has been tenured of courses in Databases and Business Intelligence for Big Data courses at the Politecnico di Torino since 2011.

Robert Wrembel: an associate professor in the Faculty of Computing, at Poznan University of Technology, in Poland; main research - data warehouse systems; involved in 7 research projects in the area of databases and data warehouses as well as in 7 industrial projects in the field of information technologies; designed and delivered numerous courses in the area of programming languages, database administration, and information systems designing, for multiple companies and institutions in Poland, including Oracle, Microsoft, IBM, BAE Systems; visiting professor at Loyola University (New Orleans, USA); invited lecturer at Universidad de Costa Rica (San Jose, Costa Rica); a graduate from Stanford University post-graduate programme on entrepreneurship and innovation; an intern at BI company Targit (Tampa, USA); a prizewinner of the "IBM Faculty Award for highly competitive research"; a regular editorial board member of the Data & Knowledge Engineering; a member of IFIP Technical Committee 2: Software: Theory and Practice; a member of IFIP Working Group WG2.6: Database, a member of ACM.

Daniele Quercia: is Department Head of Social Dynamics at Nokia Bell Labs Cambridge (UK) and Professor of Urban Informatics at the Center for Urban Science and Progress (CUSP) at King's College London. He has been named one of Fortune magazine's 2014 Data All-Stars, and spoke about "happy maps" at TED. His research has been focusing in the area of urban informatics and received best paper awards from Ubicomp 2014 and from ICWSM 2015, and an honourable mention from ICWSM 2013. He was Research Scientist at Yahoo Labs, a Horizon senior researcher at the University of Cambridge, and Postdoctoral Associate at the department of Urban Studies and Planning at MIT. He was General Chair for AAAI ICWSM and Track Chair for ACM WWW. He has been co-editor of Computer Communications Journal Special Issue on Online Social Networks (Elsevier) 2014 and for the Special issue on Personality in Personalized systems (UMUAI) 2014.He received his PhD from UC London. His thesis was sponsored by Microsoft Research and was nominated for BCS Best British PhD dissertation in Computer Science. He studied at Politecnico di Torino (Italy), Karlsruhe Institute of Technology (Germany), and University of Illinois (USA).