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DSAA 2017 Special Sessions

Special Session Chairs



Huan Liu

Arizona State University, USA



Albert Bifet

Telecom ParisTech, FRANCE



Richard D. De Veaux

Williams College, USA

Special sessions play a big role in promoting relevant focused areas that are not well covered in the main conference tracks, bringing together researchers, industry experts, practitioners and potential users who are interested in different aspects of data science and analytics.

DSAA 2017 features 9 special sessions as listed here. Both the paper submission date and the notification date for all special sessions are the same as those of the main conference tracks. When you submit a paper to a special session, select the respective special session in the IEEE DSAA 2017 submission page. Review will be coordinated by the special session chairs and final decisions will be made by the program co-chairs. Accepted special session submissions will be included into the Special Session part of the main conference proceedings to be published by IEEE and included into the IEEE Xplore Digital Library.

1. Special Session on Game Data Science (GDS 2017)
2. Special Session on Environmental and Geo-spatial Data Analytics (EnGeoData 2017)
3. Special Session on Data and Information Quality (DIQ)
4. Special Session on Data Science in Societal Debates (DSSD)
5. Special Session on Evolving Networks (EvoNets)
6. Special Session on Beyond IID: Non-IID Learning (NonIIDLearning)
7. Special Session on Big Data and Disaster Management
8. ~~Special Session on Statistical and Mathematical Tools for Data Mining (SMTDM)~~ (Cancelled)
9. Special Session on Advanced Informatic Measurement using Statistics, Machine Learning and Pattern Recognition (AimSMLPR)

Submission

Please see Call for Special Session Papers for how to submit a paper.

Special Session on Game Data Science (GDS 2017)

URL:<http://yokozunadata.com/events/GDS-DSAA2017/>

Chairs:



África Perriñez

Silicon Studio Corporation, Japan



Alessandro Canossa

Northeastern University, USA

Ubisoft, Sweden

Aims and Scope

In the last few years, we have witnessed a true revolution in the video-game industry, as both emerging mobile games and traditional video-game platforms have become continuously connected to the Internet. This has contributed to widen the audience for video games (casual gamers) and to the appearance of a series of new economic models (free-to-play, in-app purchases) that are gradually gaining more importance in a sector that traditionally relied on expensive one-time purchases or subscriptions.

More importantly, this recent paradigm shift enables game developers both to collect a vast amount of data in real time and to maintain active relationships with their players. To fully take advantage of this new scenario, it is essential to develop appropriate statistical and learning methods to model and predict player behavior, which should scale to large datasets and allow intuitive visualization of the results, among other features.

Given the richness of the possibility for actions that modern game afford, players can actually express very nuanced motivation and personalities encoded in their in-game behaviors. The current trend to include in games in-app purchases and social features, together with the extraordinary level of granularity of the collected data, turns game datasets into a unique source of information to study human behavior, including social and consumer dynamics.

The objective of this special session on Game Data Science is to gather together experts from industry and academia, providing a stimulating atmosphere that fosters collaboration and mutual exchange. We call for top-notch and inspiring contributions that explore the development and application of new technologies toward this new paradigm in the realm of video games.

Topics of Interest:

Topics of interest for GDS 2017 include (but are not limited to):

Machine learning applied to game datasets

- Advanced methods
- Dimensionality reduction and feature extraction
- Modeling of player behavior and social interactions
- Churn prediction
- Forecast of time series
- Forecast of the impact of game and marketing events on player behavior
- Clustering of player profiles and activity
- Virality models

Deployment of game data science in products

- Big data architecture challenges
- Novel algorithms that scale with big datasets
- A/B testing of game data science features
- Visualizations and visual analytics
- Novel visualization techniques for time-series analysis
- Game data science product management
- Game data science applied to game development

Contact Persons

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Alessandro Canossa a.canossa [at] neu.edu

Special Session on Environmental and Geo-spatial Data Analytics (EnGeoData 2017)

Chairs:



Diana Inkpen

University of Ottawa, Canada



Mathieu Roche

Cirad, TETIS, France



Maguelonne Teisseire

Irstea, TETIS, France

Aims and Scope

Environmental and more generally geo-spatial information is now provided by crowdsourcing but also by public administrations in the context of the open data policies. Analyses of such data are still challenging. Firstly because of their heterogeneity (structural, semantic, spatial and temporal), and secondly because of the difficulty in choosing the "best" knowledge discovery process to apply, according to the needs of the experts in the field. This special issue aims to provide high quality research covering all or part of the challenges mentioned above, from a theoretical or experimental point of view.

Challenge about data science deals with creation, storage, search, sharing, modeling, analysis, and visualization of data, information, and knowledge. In Data Science context, spatio-temporal aspects are crucial in order to manage and mine data, to index and retrieve information, and finally to discover and visualize knowledge. By taking into account these spatio-temporal aspects, original methods have to be proposed for processing real and complex data from different domains, e.g., environment, agriculture, health, urban, and so forth.

Topics of Interest:

- Pre and post processing of environmental and agriculture data
- Geographical information retrieval
- Spatial data mining and spatial data warehousing

- Knowledge discovery use-cases dedicated to environmental data
 - Spatial text mining
 - Spatial ontology
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- Spatial recommendations and personalization
 - Visual analytics for geospatial data
 - Dedicated applications:
 - Spatio-temporal analytics platform
 - Agricultural Decision Support Systems
 - Urban traffic systems
 - Trajectory analysis
 - Land-use and urban policies
 - Land-use and urban planning analysis
 - Spatio-temporal analysis in Ecology and Agriculture
 - and so forth

Contact Persons

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Diana Inkpen	diana [at] site.uottawa.ca

Special Session on Data and Information Quality (DIQ)**Chairs:****Rong Duan**

Huawei Technologies, China

**Tamraparni Dasu**

AT&T Labs, Research, USA

**Fugee Tsung**Hong Kong University of Science and
Technology, HK**Aims and Scope**

“Data wrangling” has become a critical skill for data scientists everywhere, a skill that is very much in demand in every industry, scientific endeavor and numerous other fields of application. With the availability of large and complex data, and the focus on managing the world through the power of data generated by the Internet of Things, the focus has shifted from storing, managing and retrieving data to assessing the quality of data and information. This special session aims to bring together researchers and practitioners of data and stream analytics that are interested in the theory, methodology, applications, case studies and practical solutions related to data and information quality.

Topics of Interest:

- Data Integration
- Record Linkage/Entity Resolution
- Error localization and correction
- Logic and quantitative data quality measurement
- Open data quality metrics and empirical evaluations
- Good/bad practices in data disclosure
- Assessment of the quality of data services
- Quality of linked data
- Quality of stream data
- Quality of social network data
- Data quality management and governance

Contact Person

Rong Duan	rong.duan [at] huawei.com
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Special Session on Data Science in Societal Debates (DSSD)

URL: <http://www.sobigdata.eu/data-science-societal-debates-dssd-2017>

Chairs:



Kalina Bontcheva

University of Sheffield, UK



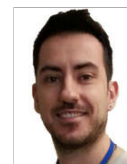
Aristides Gionis

Aalto University, Finland



Maurizio Tesconi

Institute for Informatics and
Telematics of the National Research
Council, Italy



Stefano Cresci

Institute for Informatics and
Telematics of the National Research
Council, Italy

Aims and Scope

Nowadays, social media platforms, online blogs, and discussion forums are a crucial component in the public sphere, fostering discussions and influencing the public perception for a myriads of social issues such as politics, security, climate, health, economics, migration, to name but a few. On the one hand, this represents an unprecedented opportunity to discuss and propose new ideas, giving voice to the crowds. On the other hand however, new socio-technical issues arise, which are related to the discussion of such controversial topics. Among the most pressing issues in online societal debates, is the formation of so-called "echo chambers", i.e., situations where polarized like-minded people reinforce each other's opinion, but do not get exposed to the views of the opposing side. Echo chambers have a negative effect on society since polarized communities tend to get isolated and only marginally exposed to unbiased information. As a result, people belonging to echo chambers are more likely to incur in extremization and hate. Unfortunately, misinformation is present also outside of echo chambers. Indeed, rumor spreading, fake news, and hoaxes are another major issue of all controversial social discussions, where people try to influence the opposing side with questionable means. Misinformation and political campaigns are sometimes also carried out by groups of automated accounts that pollute and tamper the social environment by injecting a large number of targeted messages. This special session focuses on data science approaches to study, model, characterize, and propose solutions to these, and other similar, challenges related to all aspects of polarized, political, and controversial societal debates.

Topics of Interest:

Areas of interest to DSSD 2017 include, but are not limited to:

Methods and Techniques:

- Modeling of online societal debates;
- Modeling influence and influencers in societal debates;
- Monitoring discussion topics across time and space;
- Text analytics for sentiment analysis and opinion mining;
- Graph mining and network analysis for studying polarized communities;
- Modeling the spread of misinformation, rumors, fake news, hoaxes;
- Data-driven methods and techniques for detecting misinformation;
- Data-driven methods and techniques for detecting malicious, polluting, and tampering accounts.

Applications of the proposed methods and techniques to the study of polarized, political, and controversial societal debates:

Applications of data science methods and techniques to:

- Reduce polarization in online communities;
- Enforce social networks security and trust;
- Detect misinformation and malicious accounts in online communities;
- Detect and prevent extremization and hate in online discussions.

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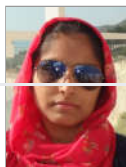
Special Session on Evolving Networks (EvoNets)

URL: <http://evonets.dcc.fc.up.pt/>

Chairs:

**Pedro Ribeiro**

University of Porto, Portugal

**Shazia Tabassum**

University of Porto, Portugal

**Fabíola S. F. Pereira**Federal University of Uberlândia,
Brazil**Mário Cordeiro**

University of Porto, Portugal

Aims and Scope

Most of the massive ubiquitous networks in our day to day life are evolving in real time. Be it the network of persons, entities, genes, sensors or their combinations, they are inherently complex and evolving with nodes appearing, disappearing, associating and disassociating with each other as time flies. In fact, most real-life networks evolve in a wide variety of ways that lead to different kinds of evolution semantics. While a deep foundation has been developed in the past years on analytics on complex networks, relatively little progress has been made when considering evolving networks. The scalability issues also keep growing alongside networks. In the light of above complexities, this special session welcomes novel research about mining and analytics in networks that evolve over time. We are interested since foundation methods that make feasible the analysis of large dynamic networks, like distributed processing, streaming, incremental algorithms, sampling etc., until pattern mining and predictive modeling tasks on evolving networks, such as community detection and event mining. We also encourage submissions exploring applications over evolving network data. The objective of this special session is to bring together researchers from different communities in this emerging topic.

Topics of Interest:

This special session is intended to attract researchers who are actively engaged in theoretical, technical and application oriented aspects of Evolving networks. The topics include, but are not limited to the following:

- Evolutionary network analysis
- Social networks and social media
- Graph data analytics
- Sampling from evolving networks
- Network data mining
- Distributed network analysis and mining
- Statistical techniques for network analysis and mining
- Temporal and streaming networks
- Predictive modeling on evolving networks
- Change detection, anomaly detection
- Incorporating network content in evolution analysis
- Community detection in evolving networks

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Special Session on Beyond IID: Non-IID Learning (NonIIDLearning)URL:<http://dsaa2017noniid.datasciences.org/>**Session Chairs:****Longbing Cao**

University of Technology Sydney, Australia

**Yang Gao**

Nanjing University, China

**Philip S Yu**

University of Illinois at Chicago , USA

Organization Chairs:

**Yinghuan Shi**

Nanjing University, China

**Guansong Pang**

University of Technology Sydney, Australia

**Chengzhang Zhu**

University of Technology Sydney, Australia

Aims and Scope

Learning from big data is increasingly becoming a major challenge and opportunity for big business and innovative learning theories and tools. Some of the most critical challenges of learning from big data are the uncovering of the explicit and implicit coupling relationships embedded in mixed heterogeneous data from single/multiple sources. The coupling and heterogeneity of the non-IID aspects form the essence of big data and most real-world applications, namely the data is non-IID.

Most of classic theoretical systems and tools in statistics, data mining, database, knowledge management and machine learning assume the independence and identical distribution of underlying objects, features and values. Such theories and tools may lead to misleading or incorrect understanding of real-life data complexities. Non-IID learning in big data is a foundational theoretical problem in AI and data science, which considers the complex couplings and heterogeneity between entities, properties, interactions and contexts.

Topics of Interest:

Topics of interest include all aspects of learning from implicitly and/or explicitly non-IID data including, but not limited to:

- Statistical foundation for non-IID learning
- Mathematical foundation for non-IID learning
- Probabilistic methods for non-IID learning
- Statistical machine learning for non-IID learning
- Non-IID learning theory and foundation
- Non-IID data characterization
- Non-IID data transformation
- Non-IID data representation and encoding
- Non-IID learning models and algorithms
- Non-IID single-source analytics
- Non-IID multi-source analytics
- Non-IID clustering
- Non-IID classification
- Non-IID recommender systems
- Non-IID text mining and document analysis
- Non-IID image and video analytics

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Special Session on Big Data and Disaster ManagementURL:<http://klab.nii.ac.jp/dsaa17/cfp.html>**Chairs:****Yusheng Ji**

National Institute of Informatics, Japan

**Guoliang Xue**

Arizona State University, USA

Aims and Scope

Disasters are events that require multiple-agency responses, and resources beyond the capability of a community. Natural disasters put tremendous threats to the lives of people, in addition to economic loss. Data and information collection, processing, analysis, and sharing are critical to disaster preparation, response, and recovery. Despite extensive prior research, there is still a great need for efficient and robust data/information analysis

technology and system for emergency applications during disasters. This special session will provide a forum for researchers and practitioners to exchange their newest research results on efficient and reliable mechanisms and technologies for data collection, analysis, decision making and information dissemination before, during, or after disasters.

Topics of Interest:

Listed but not limited to the following topics for disaster/emergency/crisis management:

- Big data analytics
- Data/information management
- Data mining from huge sources
- Social media and networks
- Crowd sourcing
- Sensory data processing
- Resilient information networking
- Big data/machine learning for situation detection
- Prediction and early warning
- Context-aware computing
- Uncertainty and possibility adversity in data handling
- Geographic information technology and system
- Open source data and space based resources
- Security and privacy issues in information sharing

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Special Session on Advanced Informatic Measurement using Statistics, Machine Learning and Pattern Recognition (AimSMLPR)

URL:<http://www.ar.sanken.osaka-u.ac.jp/aim2017/>

Chair:

Genshiro Kitagawa

Research Organization of Information and
Systems, Japan

Aims and Scope

In the last 10 years, novel measurement technologies are rapidly emerging in many scientific fields including astronomy, physics, quantum mechanics, nanoscopy, medicine, biology, ecology and sociology. They enable the measurements on various objects beyond their past limits on accuracy, resolution and sensitivity of their outcomes, and size, distance, quantity, structure and feature of the objects. They are now largely thrusting the scientific innovation.

On the other hand, these technologies rely on not only their hardware instrument technologies but also the analysis techniques for their measurement data. In many cases, the information on the objects must be estimated by processing measurement outcomes and by applying some prior information. These estimation tasks must be effectively conducted by applying the recent progress of statistics, machine learning and pattern recognition including some novel principles adapted to the measurement problems.

Based on these backgrounds, this special session aims to establish a new DSAA research field named "Mathematical Information Measurement Science (MIMS)," and calls for papers on such innovative work on the statistical, machine learning and pattern recognition techniques developed for the advanced measurements and their applications to the advanced measurement problems.

Topics of Interest:

Statistics, machine learning and pattern recognition techniques for generic advanced measurement problems including measurement optimization, complex measurement, large scale measurement, online and real time measurements and active measurement. Their adaptation and their application to various scientific, industrial, business and social fields.

Contact Person

Search

News

The conference proceedings is now available on IEEE Xplore
[2018/01/20]

Some photos from the conference are now available.
[2017/11/19]

The conference program is now available.
[2017/9/22]

NGDS award submission due has been extended to September 17, 2017.
[2017/9/3]

Call for Participation is now available.
[2017/8/20]

Registration site is now available.

Tweets by IEEEEDSAA

Conference Flyer