

# **The 2023 INFORMS Workshop on Data Science**

*Hosted by The INFORMS College on Artificial Intelligence*

**Conference date: Saturday, October 14, 2023**

**Location: Phoenix, Arizona**

**Conference website:** <https://sites.google.com/view/data-science-2023/>

The INFORMS Workshop on Data Science is a premier research conference dedicated to developing data science theories, methods, and algorithms to solve challenging problems and benefit businesses and society at large. The workshop invites innovative data science research contributions that address business and societal challenges from the lens of statistical learning, data mining, machine learning, deep learning, reinforcement learning, network science, and artificial intelligence. The workshop welcomes original research addressing non-trivial data analytical challenges and problems in marketing, finance, supply chain, healthcare, energy, cybersecurity, social network services, privacy, credibility, etc. Contributions to novel methods may be motivated by insightful observations on the limitations of existing data science methods to address practical challenges or by studying entirely new data science problems. Similarly, novel techniques may be inspired based on the unique characteristics of a particular application environment. Research contributions on theoretical and methodological foundations of data science, such as optimization for machine learning and new algorithms for data mining, are also welcome.

## **Research Contributions May Include:**

- Models for data science and predictive analytics
- Performance measures in data science with important practical implications
- Computational methods for big data, text mining, and natural language processing
- Innovative methods for social network analytics on individuals and firms
- Data acquisition, cleaning, integration, and best practices
- Data-driven methods for cybersecurity and data privacy problems
- Prediction of rare events, anomaly detection, and fraud detection
- Methods for induction and inference with missing values
- Data-driven methods for effective risk management
- Data science for healthcare: chronic disease management, preventative care, etc.
- Data science for industrial applications: energy, education, finance, supply chain, etc.
- Large-scale recommendation systems and social media systems
- Visual analytics for business data in image and video formats
- Mobile analytics and spatial-temporal data mining
- Experiences with big data project deployments
- Machine learning, reinforcement learning, and AI for business applications
- Adaptation of emerging deep learning techniques, e.g., transformers, graph embedding approaches for targeted business applications
- Generative AI and its various impacts on individuals, organizations, and societies.

## Important Dates:

Paper Submission Open: May 19, 2023

Paper Submission Deadline (**extended**) ~~June 30, 2023~~ **July 14th, 2023**

Notification of Paper Acceptance: August 11, 2023

Early Registration Deadline (INFORMS early registration): August 31, 2023

Workshop Date: October 14, 2023

## Information for Authors:

- Conference submission website: <https://cmt3.research.microsoft.com/WDS2023>
- Submissions in the form of **complete papers** or **short papers** are welcome.
  - Complete paper submissions should be a maximum of 10 pages, including tables and figures.
  - Short paper submissions (which could be extended abstracts or work-in-progress papers) should be a maximum of 5 pages, including tables and figures.
  - References (irrespective of complete paper or short paper submissions) do not count towards the page limit.
- Use single-spaced text with 12-point font and one-inch margins on four sides, printable on 8.5 x 11-inch paper.
- Submissions must be blinded. No author information should appear anywhere in the document.
- INFORMS or Workshop on Data Science **does not take ownership of paper copyrights**.
- When uploading papers to the submission portal, the authors can indicate whether or not the paper's main contributor is a student (so as to be considered for the best student paper award).

## Student Scholarship:

We will provide a scholarship to some student authors or student co-authors of accepted workshop papers. This scholarship will cover the registration fees for the INFORMS meeting and the INFORMS Data Science Workshop. More details will be provided upon paper acceptance notifications.

## Best Paper Awards:

The INFORMS College on Artificial Intelligence, which hosts the Workshop on Data Science, will be sponsoring three categories of awards: **the best complete paper, the best short paper, and the best student paper**.

## Opportunity for Invited Journal Submission:

- Selected full papers on relevant topics will also be invited to submit the extended abstract to the Special Issue of Responsible AI and Data Science for Social Good at INFORMS Journal on Computing. Details of the special issue call for papers can be found at [INFORMS Journal on Computing](#) website.
- Suitable best papers will be recommended for “fast track” at the INFORMS Journal on Data Science.

## **Organizing Committee:**

### Honorary Chairs

Olivia Sheng, University of Utah  
Alexander S. Tuzhilin, New York University

### Conference Chairs

Jingjing Li, University of Virginia, [jl9rf@virginia.edu](mailto:jl9rf@virginia.edu)  
Xiao Liu, Arizona State University, [xiao.liu.10@asu.edu](mailto:xiao.liu.10@asu.edu)  
Sagar Samtani, Indiana University, [ssamtani@iu.edu](mailto:ssamtani@iu.edu)

### Program Chairs

Victor Benjamin, Arizona State University, [Victor.Benjamin@asu.edu](mailto:Victor.Benjamin@asu.edu)  
Yingfei Wang, University of Washington, [yingfei@uw.edu](mailto:yingfei@uw.edu)  
Mochen Yang, University of Minnesota, [yang3653@umn.edu](mailto:yang3653@umn.edu)

### Publicity Chairs

Konstantin Bauman, Temple University, [tuh42084@temple.edu](mailto:tuh42084@temple.edu)  
Dokyun (DK) Lee, Boston University, [dokyun@bu.edu](mailto:dokyun@bu.edu)  
Konstantina Valogianni, IE Business School, [konstantina.valogianni@ie.edu](mailto:konstantina.valogianni@ie.edu)  
Junjie Wu, Beihang University, [wujj@buaa.edu.cn](mailto:wujj@buaa.edu.cn)

### Local Chairs

Reihane Boghrati, Arizona State University, [reihane.boghrati@asu.edu](mailto:reihane.boghrati@asu.edu)  
Katsiaryna (Katja) Siamionava, Arizona State University, [katsiaryna.siamionava@asu.edu](mailto:katsiaryna.siamionava@asu.edu)

### Finance Chair

Brent Kitchens, University of Virginia, [bmk2a@comm.virginia.edu](mailto:bmk2a@comm.virginia.edu)

### Webmaster

Liben Chen, University of Minnesota, [chen7954@umn.edu](mailto:chen7954@umn.edu)