

# The 4th International Conference on Data-driven Optimization of Complex Systems

May 27-29, 2022, Chengdu, Sichuan, China



## Honorary General Chairs

Yanrong Li, Sichuan University  
Tianyou Chai, Northeastern University

## General Chairs

Yaochu Jin, Bielefeld University  
Jiuping Xu, Sichuan University  
Zhang Yi, Sichuan University

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Dujuan Wang, Sichuan University  
Tao Yang, Northeastern University

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Mengjie Zhang, Victoria University of Wellington  
Jinliang Ding, Northeastern University  
Wenli Du, East China University of Science and Technology  
Huchuan Lu, Dalian University of Technology  
Jun Luo, Chongqing University  
Jiancheng Lv, Sichuan University  
Ling Wang, Tsinghua University  
Chunhua Yang, Central South University  
Zhigang Zeng, Huazhong University of Science and Technology

## Technical Program Chairs

Yew-Soon Ong, Nanyang Technological University  
Jonathan E. Fieldsend, University of Exeter  
Barbara Hammer, Bielefeld University  
Yuhui Shi, Southern University of Science and Technology  
Honggui Han, Beijing University of Technology  
Yuzhe Li, Northeastern University  
Biao Luo, Central South University  
Yang Tang, East China University of Science and Technology  
Handing Wang, Xidian University  
Peng Yi, Tongji University  
Yunqiang Yin, University of Electronic Science and Technology of China  
Wenwu Yu, Southeastern University  
Deming Yuan, Nanjing University of Science and Technology  
Ye Yuan, Huazhong University of Science and Technology  
Xingyi Zhang, Anhui University  
Chunhui Zhao, Zhejiang University  
Shen Yin, Norwegian University of Science and Technology

## Invited Sections Chairs

Wei Dai, China University of Mining and Technology  
Weinan Gao, Florida Institute of Technology  
Hua Geng, Tsinghua University  
Tieshan Li, University of Electronic Science and Technology of China  
Jing Liang, Zhengzhou University  
Jing Liu, Xidian University  
Qiang Liu, Northeastern University  
Jiahu Qin, University of Science and Technology of China  
Guanghui Wen, Southeast University  
Weiguo Xia, Dalian University of Technology  
Hao Luo, Harbin Institute of Technology  
Xinlei Yi, KTH Royal Institute of Technology  
Jinhui Zhang, Beijing University of Technology  
Shanyang Zhu, Shanghai Jiao Tong University

## Publicity Chairs

Ziyang Meng, Tsinghua University  
Zhengguang Wu, Zhejiang University  
Yi Liu, Zhejiang University of Technology

## Publications Chairs

Ran Cheng, Southern University of Science and Technology  
Chaoli Sun, Taiyuan University of Technology

## Financial Chairs

Chun-Yi Su, Concordia University  
Wenjun Ye, Concordia University

## Registration Chairs

Haiming Liang, Sichuan University  
Jinxi Zhang, Northeastern University

## Local Arrangements Chairs

Rui Qiu, Sichuan University  
Pengyu Yan and Wei Yan, University of Electronic Science and Technology of China

## Call for Papers

Sponsor: Sichuan University

Co-sponsors: State Key Laboratory of Synthetical Automation for Process Industries, Chinese Association of Automation, University of Electronic Science and Technology of China, Northeastern University, and Chinese Association for Artificial Intelligence

The 4th International Conference on Data-driven Optimization of Complex Systems (DOCS'2022) will be held on May 27-29, 2022 in Chengdu, China. DOCS'2022 aims to provide a high-level international forum for innovative academics and industrial experts in the related fields of data-driven optimization and its application to complex systems. The goal of the conference is to promote research and in data-driven optimization, learning and control, and their applications to complex systems, and establish a forum for academia and industrial practitioners around the world to share ideas and present their recent research advances. The conference will be featured by tutorials, workshops, plenary speeches given by world-leading researchers, regular sessions with a broad coverage, and special sessions focusing on popular and emerging topics. We warmly invite you to participate in DOCS'2022 and look forward to seeing you in Chengdu!

## Call for Papers and Special Sessions

Authors are warmly invited to contribute high-quality papers to [DOCS'2022](https://docs2022@126.com). In addition, interested researchers are encouraged to propose special sessions within the technical scopes of the conference to [docs2022@126.com](mailto:docs2022@126.com) and <https://cms.amss.ac.cn/index.php>. Special sessions aim to bring together researchers to present research findings on focused topics. For details, please visit the conference website: <https://docs2022.github.io/>

## Topics

Technical topics of the conference include, but are not limited to, the following areas:

### *Data-driven machine learning*

Dynamic big data machine learning methods and techniques, deep learning, neural architecture search, reinforcement learning, statistical relational learning, transfer learning, self-supervised learning, distributed and federated machine learning, trustworthy machine learning

### *Data-driven optimization and decision making*

Data-driven optimization algorithms, Bayesian optimization, neural combinatorial optimization, large-scale and multi-objective optimization, integration of machine learning and optimization, data-driven decision paradigm, intelligent scheduling, reinforcement learning for combinatorial optimization, distributed and federated optimization, industrial and manufacturing system analysis, and decision-making

### *Data-driven modeling and control*

Learning and adaptive control, robust control, intelligent control, optimization-based and optimal control, model predictive control, fault detection and identification, hybrid intelligent systems, neural control, fuzzy logic control, networked control, industrial automation, intelligent transportation systems, environmental monitoring and control, intelligent manufacturing systems, green communication systems

### *Big data analysis and application*

Big data storage and mining, data coordination, integration and processing, big data analytics and metrics, theory and methods of multi-source big data fusion, data base management systems, big data service, big data-oriented cloud computing technology, privacy preserving big data analysis, visual city data analysis, intelligent transportation data analysis, healthcare data analysis, bioinformatics

## Paper Submission

Authors are invited to submit full-length papers (nominal paper length is 6-8 A4 pages) by the submission deadline through the online submission system. Special session organizers are also invited to enlist at least 6 papers with cohesive topics to form special sessions. The submission of a paper implies that the paper is original and has not been submitted under review or is not copyright-protected elsewhere and will be presented by an author if accepted. All submitted papers will be refereed by experts in the field based on the criteria of originality, significance, quality, and clarity. The authors of accepted papers will have an opportunity to revise their papers and take consideration of the referees' comments and suggestions. Accepted full-length papers will be included in IEEE Xplore Digital Library and will be indexed by EI. Selected high-quality papers will be invited to be submitted to journal special issues after a substantial extension.

## Important Dates

Special session proposals deadline..... January 15, 2022  
Paper submission deadline..... February 15, 2022  
Notification of acceptance..... March 15, 2022  
Camera-ready copy and author registration..... April 15, 2022

