

Symposium on Distributed Learning and Optimization over Networks

General Chairs:

Zhi-Quan Luo, *University of Minnesota*
*The Chinese University of
Hong Kong, Shenzhen*

Technical Program Chairs:

Necdet Serhat Aybat, *Pennsylvania State University*
Mingyi Hong, *University of Minnesota*
Qing Ling, *Sun Yat-Sen University*

With the rapid advances in sensing, communication, and storage technologies, distributed data acquisition is now ubiquitous in many areas of engineering, biological, and social sciences. For example, the large-scale implementation of advanced metering systems in the smart grids enables real time collection of a huge amount of distributed data (voltages, phases, etc.), the understanding of which is critical in improving the overall performance of the future power systems. Other examples of distributed data generation include high-resolution videos from a network of surveillance systems, interactions on a social network, and environmental data from sensor networks. Timely and effectively processing of such large amount of distributed, and possibly corrupted and/or online data requires not only novel data processing techniques, but also a deep understanding of the underlying network properties of the physical system that generates the data, e.g., the network topology, the processing capability of each distributed node, the nature of the data, etc. These sophisticated characteristics bring new challenges for the design and analysis of distributed learning and optimization algorithms. This symposium aims to bring together researchers and experts in the fields of signal processing, machine learning, control, optimization, network sciences, cyber-physical systems to address the emerging challenges related to this topic. Emphasis will be given to theory and application of distributed signal processing and cyber-physical systems, as well as advanced distributed control and optimization techniques.

Topics include but are not limited to:

- Machine learning over networks and graphs
- Distributed optimization for signal processing
- Distributed control over networked systems
- Learning-based distributed resource management over networks
- Privacy preservation in distributed algorithms
- Signal processing over networks and graphs
- Distributed optimization for cyber physical systems
- Distributed optimization for communication systems
- Robust and stochastic optimization methods over networks
- Asynchronous coordination schemes

Paper Submission: Prospective authors are invited to submit full-length papers (up to 4 pages for technical content including figures and possible references, and with one additional optional 5th page containing only references) and extended abstracts (up to 2 pages, for paper-less industry presentations and Ongoing Work presentations) via the GlobalSIP 2018 conference website. Manuscripts should be original (not submitted/published anywhere else) and written in accordance with the standard IEEE double-column paper template. The accepted abstracts will not be indexed in IEEE Xplore, however the abstracts and/or the presentations will be included in the IEEE SPS SigPort. Accepted papers and abstracts will be scheduled in lecture and poster sessions.

Important Dates:

- **June 17, 2018:** Paper submission due
- **Aug. 7, 2018:** Notification of Acceptance
- **Aug. 22, 2018:** Camera-ready paper due.

For inquiries please contact: Zhi-Quan Luo (luozq@cuhk.edu.cn), Necdet Serhat Aybat (nsa10@engr.psu.edu), Mingyi Hong (mhong@umn.edu), Qing Ling (lingqing556@mail.sysu.edu.cn)