

IEEE Globecom 2015
Symposium on Selected Areas in Communications
Data Storage Track

Sponsoring Technical Committee

Data Storage Technical Committee

Co-Chair

Haitao (Tony) Xia
LSI Corporation
USA
haitao.xia@lsi.com

Scope and Motivation

Data storage is at the core of the information technology revolution, from the smartphones in our hands to data centers in the cloud. Hard disk drives, which have long been the pillar of data storage technologies, have recently been joined by flash memories, and new types of non-volatile memory devices are already emerging on the technology horizon. In addition, massive distributed storage networks have arisen to provide ubiquitous access to data. These new and existing systems pose novel problems of storage density, reliability, efficiency and security. Signal processing and coding techniques are the foundation for solving these problems. While storage channel models are fundamentally communication channels, the unique demands of recording and storage create new challenges to maintain the pace of growth.

The goal of this Data Storage Track is to bring together researchers to present novel and significant results on signal processing and coding for data storage.

Main Topics of Interest

- Error-correcting codes for storage channels and distributed storage networks
- Information theory for storage
- Channel and noise characterization for magnetic recording, flash memories and emerging memory technologies
- Network coding techniques for distributed storage networks
- Signal processing and detection methods for storage channels
- Two-dimensional intersymbol-interference
- Signal processing for shingled writing
- Modulation codes and run-length limited codes
- Circuit design for coding, detection, and read/write channels
- Data compression
- Security for cloud storage and storage devices
- Novel and emerging storage media: optical, holography, PCM, MRAM, RRAM, etc.
- Energy-efficient designs for storage

Biography of Co-Chair

Haitao (Tony) Xia is a Senior Manager of R&D at LSI Corporation, leading the research and development of advanced read channel architectures for data storage systems. Dr. Xia is the current Chairman of IEEE Data Storage Technical Committee and President of Chinese American Information Storage Society (CAISS). Before his work at LSI, Dr. Xia worked at Linked-A-Media Devices on signal processing and coding in the area of magnetic recording channels and non-volatile memories. Dr. Xia has published more than 20 articles in peer-reviewed journals/conferences, and has more than 50 US patent issued/submitted to his name. Dr. Xia is an IEEE Senior Member and Member of Sigma Xi, and has served as organizer/co-chairs for many international conferences. He received the Ph. D degree from University of Oklahoma in 2004, and B.S. and M.S. degrees from Southeast University, Nanjing, China, in 1994 and 1997, respectively.