Call for Papers for
Selected Areas in Communications Symposium
Data Storage Track

Symposium Track Chair
Edward Au Marvell Semiconductor, Inc., edward.ks.au@gmail.com, edwardau@marvell.com

Submissions must be done through EDAS at http://edas.info/N20925

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 emerging data storage applications.

Main Topics of Interest

- Signal processing and detection methods for storage channels
- Signal processing for shingled writing and bit-patterned media recording
- Channel and noise characterization for magnetic recording, flash memories and emerging memory technologies
- Error correcting and modulation codes for storage
- Two-dimensional intersymbol-interference channels for storage
- Information theory for storage
- Circuit design for coding, detection, and read/write channels
- Error-correcting codes for storage channels and distributed storage networks
- Network coding techniques for distributed storage networks
- Security and data compression for cloud storage and storage devices
- Novel and emerging storage media: optical, holography, PCM, MRAM, RRAM, etc.
- Energy-efficient designs for storage
- Architecture and design of large-scale storage subsystems based on new non-volatile memories

Sponsoring Technical Committee

- Data Storage Technical Committee

Biography of Track Chair

Edward Au is a Principal Engineer in Marvell Semiconductor Inc. with responsibilities including research, standardization and product certification of Wi-Fi and Bluetooth products. He has also been a driving force in developing foundational technologies for cognitive radio networks and optical long-haul communications. Further, Edward is actively participated in standardization organizations and industry forums, including serving as a Member of Board of Directors of Wireless Gigabit Alliance; and several leadership positions in Wi-Fi Alliance and IEEE 802. He was an active contributor in Optical Internetworking Forum where he was a co-editor of "Forward Error Correction Coding (FEC) for 100G DP-QPSK long-haul communications" and a member of Speakers Bureau in representing the Forum at industrial events.

Edward has a strong research record having published tens of papers and patents. He currently serves as an Editor for IEEE Transactions on Vehicular Technology and IEEE Transactions on Communications. He was a leading Guest Editor for IEEE Communications Magazine, Chair of 2013 Best Paper Awards Committee of Data Storage Technical Committee of IEEE Communications Society, and Lead Track/Symposium/Tutorial Co-Chair of IEEE ICACCI 2015, IEEE VTC Fall 2014, and IEEE GLOBECOM 2013. Edward is a recipient of 2013 Top Editor Award given by IEEE Transactions on Vehicular Technology.