



IEEE Data Storage Technical Committee

Update

Bane Vasić

Chair, IEEE Data Storage Technical Committee

Agenda



- Committee Mission
- Updates on conference support from DSTC:
 - Globecom 2015, San Diego
 - Chair: Haitao (Tony) Xia
 - ICC 2016, Kuala Lumpur, Malaysia
 - Chair: Edward Au
 - Globecom 2016, Washington, DC
 - Chair: Sedat Olcer
 - ICC 2017, Paris, France
 - Chair: Ozan Koyluoglu
- Awards updates:
 - 2014 DSTC Best Paper Awardees
 - 2016 DSTC Best Paper Award Committee
 - 2016 ICC Best Paper

IEEE DSTC



▪ Goals and activities:

- Technical committee under IEEE Communications Society to promote data storage related technologies and their applications.
- The Data Storage Technical Committee (DSTC) promotes advances in state-of-the-art communications, signal processing and coding technologies to enhance data storage systems, in order to achieve high storage densities, fast access, and low error rates.
- Activities: sponsoring / co-sponsoring technical sessions at major conferences, organizing workshops and tutorials, and organizing special issues of IEEE journals and magazines.
- Bridge between storage industry and universities to engage research collaboration

▪ Join us:

- Website: <http://committees.comsoc.org/spfs/>
- Contact us through Prof. Brian M. Kurkoski (kurkoski@jaist.ac.jp)

Officers



Chair

Professor Bane Vasić
The University of Arizona

Vice-Chair -Industry

Dr. Xinde Hu
SanDisk Corporation

Vice-Chair - Academia

Dr. Kui Cai
Singapore University of
Technology and Design

Secretary

Prof. Brian M. Kurkoski
School of Information
Science
Japan Advanced
Institute of Science and
Technology (JAIST)

Treasurer

Dr. Qi Qi
Avago Technologies

GC 2015 – San Diego

- Haitao (Tony) Xia, Track Chair
- Paper submission and review status
 - 18 submissions in the areas of signal processing and coding for HDD/SSD, cloud storage
 - Each paper has been assigned at least three reviewers, papers submitted to DS track were high quality papers. The overall score of papers are higher than the rest of Globecom SAC papers, negotiated with Globecom Program Chair to get 7 papers accepted for DS track.
- TPC members
 - Haitao Xia, Victor Krachkovsky, Shaohua Yang, Qi Qi, Yu Zheng, Baohua Sun, Avago Technologies, USA
 - Xinde Hu, Xinmiao Zhang, SanDisk, USA
 - Kui Cai, Kheong Sann Chan, DSI, Singapore
 - Brian Kurkoski, JAIST, Japan
 - John Barry, Georgia Tech, USA
 - Qiuju Diao, CNEX LABS, USA
 - Fang Cai, Marvell, USA
 - Richard Todd, University of Oklahoma, USA
 - Lara Dolecek, UCLA
 - Bane Vasic, University of Arizona
 - Shayan Garani, India
 - Wei Wang, University of Shandong, China

Report: Haitao (Tony) Xia

ICC 2016 – Kuala Lumpur

- Edward Au, Track Chair
- 9 papers accepted
 - 5 papers: lecture style presentation
 - 11:00am – 12:30pm, May 24
 - Session chair: Prof. Vijay Kumar (CMU)
 - 4 papers: interactive style presentation
 - 2:00pm – 3:30pm, May 24
- Thanks all TPC members for their dedicated effort!
 - Kui Cai, SUTD, Singapore
 - Lara Dolecek, UCLA, USA
 - Mehmet Fatih Erden, Seagate Technology, USA
 - Jeongseok Ha, KAIST, Korea
 - Jaekyun Moon, KAIST, Korea
 - Peter Mueller, IBM Zurich Research Laboratory, Switzerland
 - Qi Qi, Avago Technologies, USA
 - Shayan Garani Srinivasa, Indian Institute of Science, India
 - Ying Tai, UC Davis, USA
 - Bane Vasic, University of Arizona, USA
 - Tony Xia, Avago Technologies, USA
 - Jiayi Zhang, Tsinghua University

ICC 2016 - Kuala Lumpur

- **Track Chair: Edward Au**
- **Data Storage and Cloud Computing (DSCC) track is selected as part of the Selected Areas in Communications (SAC) Symposium**
 - workshop proposals, June 26, 2015
 - papers submission, October 16, 2015
 - paper acceptance notification, Jan 29, 2015
 - camera-ready papers, Feb. 29, 2015

EDAS updates:

Globecom 2016 - Washington DC

- Sedat Olcer, Track Chair
- Paper submission and review status
 - Initially 24 papers submitted, 3 papers appeared to be out of scope and have been re-assigned to other tracks/symposia
 - The 21 papers have been assigned at least 3 reviewers each, reviews reports expected by 5/31/2016
 - So far, review process running smoothly
- TPC members
 - **Benjamin Belzer**, Washington State Univ.
 - **J. R. Cruz**, University of Oklahoma
 - **Fatih Erden**, Seagate Technology
 - **Shayan Garani Srinivasa**, Indian Institute of Science
 - **Kiran Gunnam**, Vilion Memory
 - **Anxiao (Andrew) Jiang**, Texas A&M University
 - **Mustafa Kaynak**, Micron Technology
 - **Borja Peleato**, Purdue University
 - **George Mathew**, Avagotech
 - **John R Barry**, Georgia Tech
 - **Iryna Andriyanova**, ENSEA/Univ. of Cergy-Pontoise/CNRS
 - **Jeongseok Ha**, KAIST
 - **Thomas Mittelholzer**, IBM Zurich Research Laboratory
 - **Alexandre Graell i Amat**, Chalmers University of Technology
 - **Roy Cideciyan**, IBM Zurich Research Laboratory
 - **Suayb Arslan**, MEF University
 - **Qiuju Diao**, CNEX LABS
 - **Sedat Olcer**, Bilgi University
 - **Brian Kurkoski**, JAIST
 - **Jaekyun Moon**, KAIST
 - **Ravi Motwani**, Intel
 - **Ying Tai**, SanDisk
 - **Bane Vasic**, University of Arizona
 - **Haitao (Tony) Xia**, LSI
 - **Eitan Yaakobi**, Technion

ICC 2017

- 21-25 MAY 2017 // PARIS, FRANCE
- Data Storage track is selected as part of the Selected Areas in Communications (SAC) Symposium
- Track Chair: O. Ozan Koyluoglu
- Deadlines:
 - Paper Submission: 14 October 2016
 - Tutorial Proposals: 11 November 2016
 - IF&E Proposals: 11 November 2016
 - Workshop Proposals: 24 June 2016
 - Paper Acceptance Notification: 27 January 2017
 - Camera-Ready Papers Due: 24 February 2017
- Updates:
 - Preliminary TPC list is finalized, no invitations yet.
 - No EDAS access yet, need for official TPC invitations, in contact with ICC chairs.
 - CFP template is ready and it will eventually include the TPC members.

JSAC Special Issue on Data Storage

- IEEE Journal on Selected Areas on Communications
Special Issue on **Channel Modeling, Coding and Signal Processing for Novel Physical Memory Devices and Systems**
- Scope of the issue:
 - 3D non-volatile memories, (NVM), shingled and two-dimensional magnetic recording (SMR and TDMR) and energy-assisted magnetic, recording. HAMR, STT-RAMs, phase change memories, memristors.
- GUEST EDITORS:
 - Shayan Garani Srinivasa (Indian Institute of Science),
 - Tong Zhang (Rensselaer Polytechnic Institute),
 - Ravi Motwani (Intel Corporation),
 - Haralampos Pozidis (IBM Zurich) and
 - Bane Vasic (University of Arizona),

JSAC Special Issue on Data Storage

- Status:
- Initial paper submission: May 2, 2016
- ~40 submitted papers
- First reviews to the authors: July 15th.
- Final manuscript: Aug 8, 2016 (very tight schedule set by JSAC editors)
- Publication: Third quarter of 2016

2014 Best Paper Award

- **2014 Best Paper Awards Committee**
 - Shayan Garani Srinivasa, Co-Chair
 - Georgios-Alex Dimakis, Co-Chair
 - John Barry
 - Erich Haratsch
 - P Vijay Kumar
 - Simon Litsyn
 - Haris Pozidis

- **Student Competition Program**
 - Shayan Garani Srinivasa
 - Georgios-Alex Dimakis

IEEE DSTC 2014 Best Paper Award

- Best Student Paper Award

"Multipermutation Codes in the Ulam Metric for Nonvolatile Memories" by Farzad Farnoud and Olgica Milenkovic . This paper appeared in the May 2014 IEEE JSAC Special Issue on Data Storage.

- Best Paper Award

"Characterizing the rate-region of the $(4,3,3)$ exact-repair regenerating codes" by Chao Tian. This paper appeared in JSAC May 2014.

The awards were chosen out of 10 nominated papers and a panel of 6 jury members.

2015 Best Paper Award

- **2015 Best Paper Awards Committee Chairs**

- Jeongseok Ha (KAIST) Co-Chair
 - Covering: Magnetic storage, flash memories, coding and signal processing
- Kannan Ramachandran (UC Berkeley), Co-Chair
 - Covering: Distributed storage, coding and information theory
- Currently selecting the committee

2016 ICC Best Paper Award

Locally Rewritable Codes for Resistive Memories

- Authors:
- Yongjune Kim and Abhishek Sharma (Carnegie Mellon University)
- Robert Mateescu (WD Research)
- Seung-Hwan Song (HGST Research)
- Zvonimir Z Bandic (SJRC Research & HGST)
- James Bain
- B. V. K. Vijaya Kumar (Carnegie Mellon University)

(congratulations to the person chiring this meeting !!! 😊 B.V.)

A reminder for future ICC and Globecom DSTC representatives – nominate SAC-DS papers for award.

Report: Shayan Garani

DSTC Web Site

- Brian Kurkoski

- **Current Policies and Procedures**
 - 1) Membership Requirements
 - 2) Elected and Appointed Officers
 - 3) Nomination and Election Procedures
 - 4) Conduction of Meetings
 - 5) Budget & Expenses
 - 6) Supporting Activities
 - 7) TC Information Dissemination The TC will maintain an Internet Web page.
 - 8) ICC and GLOBECOM Organization