



IEEE Data Storage Technical Committee

Update

Bane Vasić

Chair, IEEE Data Storage Technical Committee

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

IEEE DSTC



▪ Conference support from DSTC:

- Globecom 2014, Austin, Texas
 - Chair: Lara Dolecek
- ICNC 2014, Honolulu, Hawaii
 - Co-Chairs: Haitao (Tony) Xia and Yiran Chen
- ICC 2015, London, UK
 - Chair: Xinde Hu
- 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

Globecom 2014 - Austin

- Lara Dolecek, Track Chair
- We had 12+1 submissions for the GC 2014 Data Storage Track (one paper appeared to have been completely out of scope).
- 6 papers were accepted.
- All papers received 3-5 reviews. Almost all TPC members responded promptly to review requests, thus ensuring timely and smooth review process. One TPC member never responded.
- The overall paper quality was pretty high. I tried to get one more paper in but the conference chairs were firm on the number of accepted papers.

▪ TPC members

- Lara Dolecek, UCLA, USA
- Benjamin Belzer, Washington State Univ.
- J. Cruz, Univ. of Oklahoma
- Faith Erden, Seagate Technology
- Shayan Garani Srinivasa, Indian Institute of Science
- Idan Goldenberg, SanDisk
- Kiran Gunnam, Vilion Memory
- Anxiao (Andrew) Jiang, Texas A&M Univ.
- Mustafa Kaynak, Micron Technology

- Brian Kurkoski, JAIST
- Luis Lastras-Montano, IBM
- Tiffany Jing Li, Lehigh Univ.
- Jaekyun Moon, KAIST
- Ravi Motwani, Intel
- Moshe Schwartz, Ben-Gurion Univ.
- Ying Tai, SanDisk
- Bane Vasic, Univ. of Arizona
- Haitao (Tony) Xia, LSI
- Eitan Yaakobi, Technion

Report: Lara Dolecek



ICNC 2014 – Honolulu

- Brendan Mumey, Symposium Chair
- Combined data storage with cloud computing big data
 - 6 paper accepted

Report: Haitao (Tony) Xia

ICC 2015 - London

- **Track Chair: Xinde Hu**
- **Data Storage and Cloud Computing (DSCC) track is selected as part of the Selected Areas in Communications (SAC) Symposium**
- The decision of combining the DS and CC is proposed by Nathan Gomes (July, 2013)
- **Total 76 members of TPC (requested by the ICC committee)**
 - Total about 91 papers (several is withdrawn)
 - 63 papers on Cloud computing (several is withdrawn)
 - 14 papers on Non- volatile memory (Flash/Phase-change etc.)
 - 4 papers on magnetic recording
 - 8 papers on general ECC
- **6 Sessions**
 - 2 oral sessions on DS & 2 oral sessions on Cloud computing
 - 2 poster sessions combined DS & CC
- **Session Chairs**
 - Prof. Euseok Hwang; Prof. Cai Kui; Dr. Naveen Kumar, Dr. Susana Sargento, Dr. Borja Peleato, Prof. Liang Chen, Prof. Francesco Chiti

Report: Xinde Hu

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, the review is completed at May 29, 2015
- 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

JSAC Special Issue on Data Storage

- IEEE Journal on Selected Areas on Communications
Special Issue on Communication Methodologies for the Next-Generation Storage Systems
- GUEST EDITORS: Lara Dolecek (lead), Mario Blaum, Jehoshua Bruck, Anxiao (Andrew) Jiang, Kannan Ramchandaran, Bane Vasic
- Initial paper submission: May 1, 2013 (extended to May 15)
First/second reviews: Sept. 1/Nov. 1, 2013
Final manuscripts due: Dec. 15, 2013
Publication: May 2014
- “terrific turn out” About 50 submitted papers
- 35% acceptance rate.
- Scope of submitted papers: coding for non-volatile memories, detection and estimation, new storage channels, distributed network storage, general combinatorial problems related to the new storage/memory channels, others.

Report: Lara Dolecek

2013 Best Paper Award

- The DSTC gives two papers awards, the IEEE Data Storage Best Paper Award and the IEEE Data Storage Best Student Paper Award.
- 2013 Best Paper Award Chair, Edward Au
- 2014 Student Competition Program Chairs: Edward Au and Yiwei Song
- **Committee Members**
 - John B. Anderson,
 - Edward Au
 - Marc Fossorier
 - Jae Moon
 - Peter Mueller
 - Bazhong Shen
 - Bane Vasic

2013 Best Paper Award

▪ 2013 Best Paper Award

- Awardees: Itzhak Tamo, Zhiying Wang and Jehoshua Bruck
- Paper: "Zigzag Codes: MDS Array Codes With Optimal Rebuilding," *IEEE Transactions on Information Theory*, Vol. 59, No. 3, March 2013.

▪ 2013 Best Student Paper Award

- Awardees: Amin Karbasi, Amir Hesam Salavati, Amin Shokrollahi and Lar R. Varshney
- Paper: "Noise-Enhanced Associative Memories," Proceedings of Neural Information Processing Systems, pp. 1682–1690, 2013, Proceedings of 2013 Neural Information Processing Systems Conference

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

Report: Shayan Garani

2014 Best Paper Award

- The call for nominations for the best paper and best student paper awards have been sent out. This information is available on
 - IEEE DSTC news groups and IEEE DSTC web page.
 - Posted on linked-In and ITSOC web pages.
 - The information is also sent to IEEE. Trans. Mag. Editors and IEEE. Comm. Editors.
 - Periodic emails will be sent out until the deadline date.
- The committee is formulated. The deadline for nominations is June 30th 2015.
 - The jury comprises of seven members balancing the areas between physical and distributed data storage.
Alex Dimakis, Erich Haratsch, Haris Pozidis, John Barry, Shayan Garani, Simon Litsyn, P Vijay Kumar
Chairs: Shayan Garani and Alex Dimakis
 - We have received one nomination so far.

Report: Shayan Garani

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Report: Shayan Garani

IEEE DSTC



- Membership Promotion support from DSTC:
 - 2013 IEEE Fellows
 - Prof. Krishna Narayanan, Texas A&M University
Citation: “for contributions to coding for wireless communications and data storage”
 - Haitao Xia – nomination 2015
 - 2013 IEEE Senior Member
 - Prof. Lara Dolecek, UCLA

Report: Haitao (Tony) Xia

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