



Circuits and Systems
Society

Annual Report of the Digital Signal Processing (DSP) Technical Committee 2013-2014

Chairman: Prof. Wei-Ping Zhu
Secretary: Prof. Mrityunjoy Chakraborty
Past-Chairman: Prof. Moncef Gabbouj

Introduction

The Digital Signal Processing Technical Committee (DSP TC) of the IEEE Circuit and Systems Society has been very active in 2013-2014. The following report highlights the members' activities in various areas of interest to CASS community. The members participated actively in ISCAS 2013 as well as ISCAS 2014; the latter activities are detailed in section 2. They have been involved in various capacities in a large number of conferences listed in section 3. Nine books/book chapters have been authored by members of the TC as detailed in section 4. A total of 31 plenary and invited lectures at international conferences, workshops, universities and industries, have been given by members of the TC as outlined in Section 5. Sections 6 and 7 of the report summarize the various editorial and IEEE services carried out by members of the TC. The DSP TC technically co-sponsored five conferences and workshops as listed in section 8. DSPTC members have been encouraged to place special emphasis on quality of the conferences and workshops as discussed in the 2013 annual TC meeting. Additional activities carried out by members of the TC are highlighted in section 9. Finally, the report ends with news from members of the TC and prestigious distinctions obtained in 2013-2014. We are proud of all the distinctions and awards received by the members. In particular, we wish to congratulate Dr. Wei Xing Zheng who has recently been elevated to IEEE Fellow and Dr. Mohsin Jamali who has been appointed as Distinguished Lecturer for IEEE Circuits and Systems Society for 2014-2015. Congratulations!

1 DSP TC Meeting

The 2013 DSP TC Annual Meeting was held in Beijing, China, on Wednesday May 23, 2013, during the 2013 IEEE International Symposium on Circuits and Systems. The minutes of the meeting contain a detailed report of the items discussed and decisions taken during the meeting as well as the list of attendees.

2 ISCAS 2014

IEEE ISCAS 2014 is held during June 1-5, 2014, in Melbourne, Australia. Moncef Gabbouj, Wei-Ping Zhu and Tapio Saramäki served as the DSP Track Co-Chairs. The Review Committee Members of the DSP Track involved the following members of the DSP TC:

Omair Ahmad, Oscar Au, M. Chakraborty, S.C. Chan, Yun Chen, Linda DeBrunner, Karen Eguiazarian, Moncef Gabbouj, Oscar Gustafsson, Bah-Hwee Gwee, Dominic Ho, Xinpeng Huang, Mohsin Jamali,

Håkan Johansson, Izzet Kale, Aimin Jiang, Lina Karam, Masayuki Kawamata, Andy Khong, H.K. Kwan, Chris Lee, Raija Lehto, Xu Li, Yong Lian, Zhiping Lin, Yong Ching Lim, Wing-Kuen Ling, Wu-Sheng Lu, Daniel P.K. Lun, Kai-Kuang Ma, Pramod Kumar Meher, Yoshikazu Miyanaga, Truong Nguyen, Behrouz Nowrouzian, Tokunbo Ogunfunmi, Soontorn Orintara, Ravi P Ramachandran, Tapio Saramaki, Wan-Chi Siu, Andreas Spanias, Akira Taguchi, David Tay, Chien-Cheng Tseng, Chao Wang, Alan Willson, Yajun Yu, Wei Xing Zheng, Wei-Ping Zhu. In addition, Dr. Wei Xing Zheng also served as an Organizing Committee Member and a Special Session Co-Chair for ISCAS2014.

Non-DSP TC member reviewers also helped out. They include Drs. Faouzi Alaya Cheikh, Amel Ben Azza, Azeddine Beghdadi, Shaikh A. Fattah, Lazhar Khriji, Aggelos Pikrakis, S. M. Mahbubur Rahman, Corneliu Rusu, Bertram Shi, Ioan Tabus, and Yao Wang. Most DSP sessions at ISCAS 2014 are chaired by members of the DSP TC. We are grateful for the DSP TC members mentioned above and the non-members who helped with the review of papers submitted to the DSP track of ISCAS 2014. In the DSP track, 93 papers were submitted, of which 50 papers have been accepted and allocated to 6 oral and 4 poster sessions each with 5 papers except that one poster paper was withdrawn. This corresponds to roughly 50% acceptance rate in the DSP track.

In addition,

3 Other conferences where DSP TC members were involved

- OC Au, Technical Program Committee, IEEE Int. Sym. On Circuits and Systems (ISCAS), Beijing, China, May 2013. (Also Demo Chair)
- OC Au, Technical Program Committee, IEEE Int. Conf. on Multimedia and Expo (ICME), San Jose, USA, July 2013.
- OC Au, Technical Program Committee, IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP), Vancouver, Canada, May 2013. (Also Track Chair)
- OC Au, Technical Program Committee, IEEE Int. Conf. on Image Processing (ICIP), Melbourne, Australia, Sept. 2013.
- OC Au, Technical Program Committee, IEEE Int. Workshop on Multimedia Signal Processing (MMSP), Sardinia, Italy, Sept. 2013.
- OC Au, Technical Program Committee, IEEE Int. Sym. On Visual Communication and Image Processing (VCIP), Kuching, Malaysia, Nov. 2013.
- OC Au, Technical Program Committee, IEEE Image, Video and Multidimensional Signal Processing Workshop (IVMSP), Seoul, Korea, Jun. 2013.
- OC Au, Technical Program Committee, APSIPA Annual Summit and Conference (ASC), Tainan, Taiwan, China, Nov. 2013. (Also Track Chair).
- OC Au, Technical Program Committee, IEEE China Summit and International Conference on Signal and Information Processing (ChinaSIP), Beijing, China, July. 2013. (Also Panel Chair).
- OC Au, Technical Program Committee, IEEE Packet Video Workshop (PV), San Jose, CA, USA, Dec. 2013.
- OC Au, Technical Program Committee, IEEE Int. Sym. On Multimedia (ISM), Anaheim, CA, USA, Dec 2013. (Also Best Paper Award Chair).

- OC Au, Technical Program Committee, IEEE International Conference on Signal Processing, Communications and Computing (ICSPCC), Dalian, China, Aug. 2013.
- OC Au, Technical Program Committee, IEEE International Conference on Cyber, Physical and Social Computing (CPSCOM), Beijing, China, Aug. 2013.
- OC Au, Technical Program Committee, Pacific-Rm Symposium on Image and Video Technology (PSIVT), Guanajuato, Mexico, Oct. 2013.
- OC Au, Technical Program Committee, IASTED International Conference on Signal and Image Processing (SIP), Banff, Canada, July. 2013.
- OC Au, Technical Program Committee, European Workshop on Visual Information Processing (EUVIP), Paris, France, Jun. 2013.
- OC Au, Technical Program Committee, IEEE International Symposium on Image, Signal Processing and Analysis (ISPA), Tieste, Italy, Sept. 2013.
- Mrityunjoy Chakraborty, Technical Program Committee Co-Chair, APSIPA Annual Summit and Conference – 2013, Kaohsiung, Taiwan, Oct. 29-Nov. 1, 2013.
- S. C. Chan, Special Session Co-Chair, International Conf. on Digital Signal Processing, DSP2014.
- Linda DeBrunner, Publicity Chair and Steering Committee Member, Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, USA.
- Moncef Gabbouj, Technical Program Chair, 2014 International Symposium on Communications, Control and Signal Processing, ISCCSP 2014, 21-23 May 2014, Athens, Greece
- Moncef Gabbouj, Chairman, 8th European Workshop on Visual Information Processing, 10-12 December 2014, Paris, France.
- Oscar Gustafsson, Technical Program Committee Member, International Workshop on Power and Timing Modeling, Optimization and Simulation, 2013.
- Dominic Ho, Technical Program Committee of Sensor Array and Multichannel Technical Committee, The IEEE International Conferences on Acoustics, Speech, Signal Processing, Vancouver, Canada, May 26-31, 2013.
- Dominic Ho, Technical Program Committee, The Fifth IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, Saint Martin, Dec. 15-18, 2013.
- Dominic Ho, Technical Program Committee, The Eighth IEEE Sensor Array and Multichannel Signal Processing Workshop, A Coruña, Spain, Jun. 22-25, 2014.
- Mohsin Jamali, Technical Committee Program Chair for the International Conference on Multi-Media Signal Processing and Communication Technologies, (IMPACT 2013), November 2013.
- Mohsin Jamali, Technical Area Chair for Speech, Image and Video Processing, Asilomar Conference on Signals, Systems, and Computers,” November 2014.
- Håkan Johansson, Member of the Technical Program Committee of the IEEE Wireless Communications and Networking Conference (WCNC), 2013, 2014.
- Håkan Johansson, Member of the Technical Program Committee of the IEEE Global Communications Conference (GLOBECOM), 2013, 2014.
- Håkan Johansson, Member of the Technical Program Committee of the IEEE International Conference on Communications (ICC), 2013.
- LJ Karam, General Char, 2013 International Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM 2013)

- LJ Karam, Technical Area Chair, 2013 and 2014 IEEE International Conference on Image Processing (ICIP).
- LJ Karam, Publicity Chair, 2013 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP).
- LJ Karam, General Chair, 2016 IEEE International Conference on Image Processing (IEEE ICIP).
- LJ Karam, Technical Program Chair, 2014 International Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM 2014) (2013-2014).
- LJ Karam, Technical Program Co-Chair, IEEE International Conference on Multimedia and Expo (ICME 2017) to be held in Hong Kong.
- LJ Karam, Steering Committee, IEEE International Workshop on Quality of Multimedia Experience (QoMEX), 2013 and 2014.
- Chi-Wah Kok, Member of Technical Program Committee, 2014 IEEE Electron Device and Solid State Circuit
- Chi-Wah Kok, Member of Technical Program Committee, 2014 IEEE Conference on Image Processing
- Chi-Wah Kok, Member of Technical Program Committee and Publication Co-chair, 2014 IEEE International Symposium on Next-Generation Electronics
- Tokunbo Ogunfunmi, Special Sessions Chair, IEEE World Forum on Internet of Things, Seoul, Korea, March 2014.
- HK Kwan, Technical Program Co-Chair, International Conference on Digital Signal Processing (DSP 2014), Hong Kong, 20-23 August, 2014.
- Y Lian, Technical Program Co-Chair, 2014 IEEE Asia Pacific Conference on Circuits and Systems, Okinawa, Japan, Nov. 17-20, 2014.
- Y Lian, Technical Program Committee, 12th International Conference on Solid-State and Integrated Circuit Technology (ICSICT'2014), Guilin, China, Oct 28-31, 2014.
- Y Lian, International Liaison, 2014 IEEE Biomedical Circuits and Systems Conference (BioCAS'2014), Lausanne, Switzerland, Oct. 22-24, 2014.
- Y Lian, General Chair, 2014 IEEE Asia and South Pacific Design Automation Conference (ASP-DAC2014), Singapore, Jan 20-23, 2014.
- Y Lian, Steering Committee Member, 2013 IEEE Life Science Grand Challenges Conference, Singapore, Dec. 7-9, 2013.
- Y Lian, Technical Program Committee, 2013 IEEE Asian-Solid-State Circuits Conference (A-SSCC), Singapore, Nov 11-13, 2013
- Y Lian, Technical Program Committee, 10th International Conference on ASIC (ASICON 2013), Shenzhen, China, Oct. 28-31, 2013.
- Y Lian, Technical Program Committee, the 39th European Solid-State Circuits Conference (ESSCIRC'2013), Bucharest, Romania, Sept 2013.
- Y Lian, International Advisory Committee Co-Chair, 2013 IEEE MTT-S International Microwave Workshop Series on RF and Wireless Technologies for Biomedical and Healthcare Applications, Singapore, Aug. 1-3, 2013.
- Zhiping Lin, General Chair, 9th International Conference on Information, Communications and Signal Processing (ICICS), Tainan, Taiwan, Dec., 2013.

- Daniel P.K. Lun, General Co-Chair, 19th International Conference on Digital Signal Processing, August 20-24, 2014, Hong Kong.
- Daniel P.K. Lun, Technical Co-Chair, 2015 Asia Pacific Signal and Information Processing Association (APSIPA) Submit and Conference, 2015, Hong Kong.
- Yoshikazu Miyanaga, General Co-Chair, 2011 International Symposium on Multimedia and Communication Technology (ISMAC 2013), Holiday Inn, Bangkok, Thailand, February 4-5, 2013.
- Yoshikazu Miyanaga, Honorary Chair, The International Electrical Engineering Congress 2013 (IEECON2013), Chiangmai, Thailand, March 13-15, 2013.
- Yoshikazu Miyanaga, Honorary Chair, International Symposium on Communications and Information Technologies (ISCIT 2013, IEEE), Samui Island, Thailand, September 4-6, 2013.
- Yoshikazu Miyanaga, Promotion Chair, 2014 IEEE ASIA Pacific Conference on Circuits and Systems (APCCAS 2014), Ishigaki Island, Okinawa, Japan, November 17 - 20, 2014.
- Yoshikazu Miyanaga, Advisor Chair, International Symposium on Communications and Information Technologies (ISCIT 2014, IEEE), Incheon, Korea, September 24-26, 2014.
- Tokunbo Ogunfunmi, Tutorial Chair, International Conference on Multimedia and Expo (ICME), San Jose, July 2013.
- I. Pitas, Publicity Chair, International Symposium on Image and Signal Processing and Analysis ISPA2013, Trieste, Italy, 4-6/9/2013.
- I. Pitas, General Co-Chair, 12th IEEE IVMSWP workshop: 3D image/video technologies and applications, Seoul, Korea, 10-12/6/2013.
- Tapio Saramäki, Steering Committee Member of the International Symposium on Image and Signal Processing and Analysis (ISPA).
- Tapio Saramäki, Technical Program Committee Member and Session Chair, 8th International Symposium on Image and Signal Processing and Analysis (ISPA 2013), September 4-6, 2013, Trieste, Italy.
- Tapio Saramäki, Technical Program Committee Member, 21st European Conference on Circuit Theory and Design, ECCTD 2013, September 8-12, 2013, Dresden, Germany.
- Wan-Chi Siu, Member of Steering Committee, 2014 19th International Conference on Digital Signal Processing, Hong Kong, 20-23 August, 2014, Hong Kong.
- Wan-Chi Siu, Technical Program Chair, 2013 Constantinides International Workshop on Signal Processing (CIWSP'2013), 25 January 2013, Imperial College of Science, Technology & Medicine, London, UK.
- Wan-Chi Siu, Session Chairman for sessions: "Advanced Visual Coding I", and "Image and Video Supervision", IEEE International Symposium on Circuits and Systems (ISCAS'2013), 19-23 May, 2013, Beijing China.
- Thanos Stouraitis, General Co-chair, 6th International Symposium on Communications, Control and Signal Processing (ISCCSP 2014), May 2014, Athens, Greece.
- Thanos Stouraitis, Steering Committee Chair, ICECS.
- M.N.S. Swamy, Member of the Steering Committee, IEEE Int. Midwest Sym. On Circuits and Systems
- Akira Taguchi, Technical Program Co-Chair, IEEE Region 10 Humanitarian Technical Conference 2013 (IEEE R10-HTC2013), Aug. 26-29, Sendai, Japan

- Akira Taguchi, General Chair, 2013 International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS 2013, IEEE), Okinawa, Japan, November 12-15, 2013.
- Akira Taguchi, Track Chairs (Digital Signal Processing), 2014 IEEE Asian Pacific Conference on Circuits and Systems (APCCAS 2014).
- Y. J. Yu, Logistic Chair, 2014 Asia and South Pacific Design Automation Conference (ASP-DAC), Singapore.
- Y. J. Yu, Web & Logistic Chair, ISIC 2014 International Symposium on Integrated Circuits, Singapore.
- Wei Xing Zheng, Technical Program Committee Member of the 25th Chinese Control and Decision Conference (CCDC'2013), Guiyang, Guizhou, China, May 2013.
- Wei Xing Zheng, International Program Committee Member of the 9th Asian Control Conference (ASCC'2013), Istanbul, Turkey, June 2013.
- Wei Xing Zheng, Program Committee Member of the 32nd Chinese Control Conference (CCC'2013), Xi'an, Shaanxi, China, July 2013.
- Wei Xing Zheng, Organized & Focused Session Chair of the 2013 IEEE International Conference on Automation and Logistics (ICAL'2013), Yinchuan, China, August 2013.
- Wei Xing Zheng, Program Committee Member of the 2013 IEEE International Conference on Information and Automation (ICIA'2013), Yinchuan, China, August 2013.
- Wei Xing Zheng, Program Committee Member of the 3rd IFAC International Conference on Intelligent Control and Automation Science (ICONS'2013), Chengdu, Sichuan, China, September 2013.
- Wei Xing Zheng, Technical Program Committee Member of the 3rd Australian Control Conference (AUCC'2013), Perth, Australia, November 2013.
- Wei Xing Zheng, International Program Committee Member of the 2013 IEEE International Conference on Robotics and Biomimetics (ROBIO'2013), Shenzhen, China, December 2013.
- Wei Xing Zheng, Technical Program Committee Member of the 26th Chinese Control and Decision Conference (CCDC'2014), Changsha, May 2014.
- Wei Xing Zheng, International Program Committee Member of the 11th World Congress on Intelligent Control and Automation (WCICA'2014), Shenyang, China, June 2014.
- Wei Xing Zheng, Technical Program Committee Member of the 33rd Chinese Control Conference (CCC'2014), Nanjing, China, July 2014.
- Wei Xing Zheng, Program Committee Member of the 2014 IEEE International Conference on Information and Automation (ICIA'2014), Hailar, China, July 2014.
- Wei Xing Zheng, International Program Committee Member of the 11th International Conference on Informatics in Control, Automation and Robotics (ICINCO'2014), Vienna, Austria, September 2014.
- Wei Xing Zheng, Technical Program Committee Member of the 4th Australian Control Conference (AUCC'2014), Canberra, Australia, November 2014.
- Wei Xing Zheng, Program Committee Member of the 53rd IEEE Conference on Decision and Control (CDC'2014), Los Angeles, USA, December 2014.
- Wei Xing Zheng, International Program Committee Member of the 2014 IEEE International Conference on Robotics and Biomimetics (ROBIO'2014), Hanoi, Vietnam, December 2014.
- Wei-Ping Zhu, Technical Program Committee Member, 2013 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PacRim2013), Victoria, Canada.

- Wei-Ping Zhu, Technical Program Committee Member, 2014 International Conference on Advances in Computing, Communications and Informatics (ICACCI-2014), Delhi, India
- Wei-Ping Zhu, Track Co-Chair for Image, Video and Signal Processing at IEEE NEWCAS 2013, Paris, France.
- Wei-Ping Zhu, Track Co-Chair for Digital Signal Processing at IEEE NEWCAS 2014, Montreal, Canada.
- Wei-Ping Zhu, Special Session Organizer for Speech Processing at 2014 Asilomar Conference on Signals, Systems, and Computers.

4 Books and Book Chapters

- Serkan Kiranyaz, Turker Ince and **Moncef Gabbouj**, *Multidimensional Particle Swarm Optimization for Machine Learning and Pattern Recognition*, Springer, 2014.
- Tatiana Efimushkina, **Moncef Gabbouj**, "Survey on Cross-Layer Adaption for Video Downlink Communications over LTE," Cross-Layer Adaptation-Based Video Downlink Transmission over LTE: Survey," in Communications in Computer and Information Science (CCIS) series, Springer, submitted.
- **Oscar Gustafsson** and Lars Wanhammar, "Arithmetic," in Handbook of Signal Processing Systems, 2nd Edition, Springer, 593-637, 2013.
- **Håkan Johansson** and **Oscar Gustafsson**, "Two-rate based structures for computationally efficient wide-band FIR systems," in Digital Filters and Signal Processing, Eds. F. P. Garcia Marquez and N. Zaman, ch. 8, pp. 189–212, 2013.
- **Håkan Johansson**, "Sampling and quantization," in Academic Press Library in Signal Processing: Signal Processing Theory and Machine Learning, vol. 1, pp. 169–244, 2013.
- **Chi-Wah Kok** and Wing-Shan Tam, Digital Image Interpolation, Wiley, in press, 2014
- **Tokunbo Ogunfunmi**, Roberto Togneri and Sim Narasimha (Editors), Speech and Audio Processing for Coding, Enhancement and Recognition, Springer Publishers, in press (due 2014)
- **Tokunbo Ogunfunmi** and X. Qian, Principles of Adaptive Filters, CRC Press, in press (due 2015)
- Ke-Lin Du and **M.N.S. Swamy**, Neural Networks and Statistical Learning, Springer Verlog, London 2014.
- L. Wanhammar, and **Y. J. Yu**, "Digital Filter Structures and Their Implementation" Academic Press Library in Signal Processing: Volume 1: Signal Processing Theory and Machine Learning, (Editor-in-Chief: Sergios Theodoridis and Rama Chellappa, Publisher: Academic Press), 2013.

5 Plenary Sessions, Keynote Speakers, Invited Lectures

- OC. Au, on "Can we get more than 1-pixel resolution out of 1 pixel?", a keynote in the 19th International Conference on Multimedia Modeling (MMM 2013), 7-9 Jan. 2013, Huangshan, China.
- OC. Au, on "An overview of image/video compression down the history lane", a plenary overview talk in APSIPA Annual Summit and Conference (ASC), 29 Oct – 1 Nov. 2013, Kaohsiung, Taiwan, China.
- OC Au, on "Next Generation Video Coding- H.265/HEVC and its extensions", a tutorial in APSIPA Annual Summit and Conference (ASC), Oct 2013, Kaohsiung, Taiwan, China.

- OC Au, on “Contemporary Multimedia Compression Technique Overview and Future Directions”, 24 Jun. 2013, an invited APSIPA DLP seminar at Fudan University (main campus), Shanghai, China.
- OC Au, on “Contemporary Multimedia Compression Technique Overview and Future Directions”, 25 Jun. 2013, an invited APSIPA DLP seminar at Fudan University (Zhangjiang campus), Shanghai, China.
- OC Au, on “Image Colorization using Sparse Representation”, 26 Jun. 2013, an invited APSIPA DLP seminar at Tongji University, Shanghai, China.
- OC Au, on “Can we get more than 1 pixel resolution out of 1 pixel?”, 27 Jun. 2013, an invited APSIPA DLP seminar at Shanghai Jiaotong University, Shanghai, China.
- OC Au, on “Image Colorization using Sparse Representation”, 28 Jun. 2013, an invited APSIPA DLP seminar at Shanghai University, Shanghai, China.
- OC Au, on “Can we get more than 1 pixel resolution out of 1 pixel?”, 27 Jun. 2013, an invited APSIPA DLP seminar at Huazhong University of Science and Technology (HUST), Wuhan, China.
- OC Au, on “Image Colorization using Sparse Representation”, 2 July. 2013, an invited APSIPA DLP seminar at University of Science and Technology China (USTC), Hefei, China.
- OC Au, on “How to do research?”, 3 July. 2013, an invited APSIPA DLP seminar at University of Science and Technology China (USTC), Hefei, China.
- OC Au, on “Image Colorization using Sparse Representation”, 4 July 2013, an invited APSIPA DLP seminar at Nanjing University, Nanjing, China.
- OC. Au, on “Next Generation Video Coding – H.265 and its extensions”, a talk in 4D Workshop for Knowledge Sharing, 1 Nov. 2013, Kaohsiung, Taiwan, China.
- Sankar Basu (with Alfred Fettweis), Physical modeling of fluid dynamic equations by multidimensional (MD) nonlinear passive Kirchhoff circuits, Eighth International Symposium on Multidimensional Systems, Erlangen, Germany, Sept 9-11, 2013.
- Moncef Gabbouj, keynote speaker at the 7th IEEE GCC Conference and Exhibition, GCC-2013, 17-20 November 2013, Doha, Qatar.
- Moncef Gabbouj, Keynote at the International Conference on Computer, Control, Informatics and Its Application, IC3INA 2013, 19-20 November 2013, Jakarta, Indonesia.
- Dominic Ho, on “Achieving Asymptotic Efficient Localization Performance Using Squared TOA or TDOA Measurements” invited talk in the 2nd International Workshop on Mathematical Issues in Information Sciences, Jul. 2013, Xi'an, China.
- Mohsin Jamali, “Data Fusion,” International Conference on Multimedia Signal Processing and Communication Technologies, (IMPACT 2013), November 2013.
- L.J. Karam, “Attentive visual processing: towards user-centric visual technologies,” Distinguished Lecture, International Conference on Computing, Networking and Communications (ICNC), 2014.
- Chi-Wah Kok, Seminar Speaker: CMOS Voltage Reference, Chang Gung University, Taoyuan, Taiwan.
- Y Lian, on “Self-powered wireless biomedical sensors: challenges and future”, an invited talk at Shanghai Jiao Tong University, July 22, 2013, Shanghai, China.
- Yoshikazu Miyanaga, Keynote Speaker, AUN/SEED-Net Regional Conference on Electrical and Electronics Engineering, Kuala Lumpur, Malaysia, March 4-5, 2014.
- Tokunbo Ogunfunmi, Keynote Talk: Nonlinear Adaptive Algorithms and Applications, 2013 RPIC XV International Conference, Bariloche, Argentina, Sept. 2013

- Tokunbo Ogunfunmi, IEEE Distinguished Lecture: Algorithm and Architecture Co-Design for Fast Motion Estimation Video in H.264/AVC, RMIT University, Melbourne, Victoria and Engineers Australia, Australia, Sept. 2013
- Tokunbo Ogunfunmi, Invited Lecture: Scalable Multi-Rate Speech Coder for Voice-over-IP Networks: Beyond iLBC, IEEE SPS Chapter, Melbourne, Victoria, Sept. 2013
- Tokunbo Ogunfunmi, Tutorial: Advances in Wireless Local Area Networks, IEEE International Symposium on Circuits and Systems (ISCAS), Beijing, China, May 2013
- Tokunbo Ogunfunmi, Organized and Chaired the Workshop: Re-Thinking Circuits and Systems Education: Alternative Approaches and Pedagogies, Beijing, China, May 2013.
- I. Pitas, Invited lecture on 'Human activity recognition for video content analysis and description', National Lab for Pattern recognition, Chinese Academy of Sciences, 17/10/2013
- I. Pitas, Invited lecture on 'Human activity recognition for video content analysis and description', 9th International Conference on Intelligent Information Hiding and Multimedia Signal Processing (IIHMSP2013), Beijing 15-18/10/2013
- I. Pitas, Invited EURASIP fellow inaugural lecture on 'Anthropocentric computing: human-centered 2D/3D audiovisual content analysis and description' in EUSIPCO2013, 11/9/2013
- I. Pitas, Invited lecture on 'Human-centered multiview and stereo video analysis', Institute of Intelligent Systems Studies and Automation (ISSIA), CNR Bari, Italy, 9/5//2013
- I. Pitas, Invited Distinguished IEEE lecture on 'Human-Centered Multiview and Stereo Video Analysis', School of EEE, Nanyang Technological University, Singapore, 17/4/2013
- I. Pitas, Invited keynote lecture on 'Discriminant Non-negative Matrix Factorization for Facial Image Analysis', at the IEEE Symposium on Computational Intelligence in Biometrics and Identity Management (CIBIM 2013), part of the 2013 IEEE Symposium Series on Computational Intelligence (SSCI2013), Singapore 16-19/4/2013.
- Tapio Saramäki, An invited talk at "Memory of Are Hjørungnes" workshop, 23-24 May, Trondheim, Norway. (<http://www.flexible-radio.com/workshop/moah/program>).
- Wan-Chi Siu, Keynote Speaker, "Quality Video Surveillance under Internet Environment", 2014 IEEE International Consumer Electronics - China (ICCE-China 2014) on Internet of Things (IoT): Technologies and Applications for Consumer Electronics, April 9-13, 2014, Shenzhen, China
- Wan-Chi Siu, Keynote Speaker, "Challenges on Video Surveillance under Quality Expectations and Big Data Environment", the Ninth International Conference on Intelligent Information Hiding and Multimedia Signal Processing (IIH-MSP2013), October 16-18, 2013, Beijing, China
- Wan-Chi Siu, Invited Panel Speaker, "Meeting with IEEE/SPS Leadership", IEEE China Summit and International Conference on Signal and Information Processing (ChinaSIP'2013), 6-10 July 2013, Beijing China.
- Thanos Stouraitis, keynote talk on "Cryptographic System Implementations," The 17th CSI International Symposium on Computer Architecture & Digital Systems (CADS 2013) , October 30-31, 2013, Tehran, Iran.
- Wei-Ping Zhu, Invited Talk on Compressed Sensing based Speech Enhancement, Zhe Jiang University, Hangzhou, China, August 2013.
- Wei-Ping Zhu, Invited Talk on Signal Perturbation Free Methods for MIMO/OFDM Channel Estimation, Zhe Jiang University of Technology, Hangzhou, China, December 2013.

6 Editorial Services

- Oscar Au, Associate Editor of IEEE Signal Processing Letter (SPL), 2014-2015
- Oscar Au, Associate Editor of IEEE SignView Video Library (SigView), 2014-2015
- Oscar Au, Senior Editor of IEEE Journal on Selected Topics in Signal Processing (JSTSP), 2014-2015
- Oscar Au, Associate Editor of APSIPA Transactions on Signal and Information Processing (TSIP).
- Oscar Au, Member of Editorial Board, Elsevier Journal of Visual Communication and Image Representation (JVCIR)
- Oscar Au, Member of Editorial Board, Springer Journal of Signal Processing Systems (JSPS).
- Oscar Au, Member of Editorial Board, Academy Publisher Journal of Multimedia (JMM)
- Oscar Au, Associate Editor, Elsevier Journal of Franklin Institute (JFI)
- Oscar Au, Member of Editorial Board, Journal of Data Acquisition and Processing (JDAP)
- Oscar Au, Member of Editorial Board, Hindawi Scientific World Journal (SWJ)
- Oscar Au, Guest Editor, Special Issue on Video Coding: HEVC and beyond, IEEE Journal of Selected Topics in Signal Processing, Dec 2013.
- Sankar Basu, Member of Editorial Board, IEEE Proceedings.
- Sankar Basu, Member of Editorial Board, Multidimensional Systems and Signal Processing, Springer.
- Mrityunjy Chakraborty, Associate Editor, IEEE Journal on Computing in Science and Engineering (as a representative of the IEEE SPS).
- S. C. Chan, Associate Editor, IEEE Trans. on Circuits and Systems II.
- S. C. Chan, Associate Editor, Journal of Signal Processing Systems.
- S. C. Chan, Associate Editor, Digital Signal Processing.
- Linda DeBrunner, Associate Editor, Journal of Circuits, Systems, and Computers, (World Scientific).
- Tian-Bo Deng, Associate Editor, IEEE Trans. on Circuits and Systems II (2013).
- Oscar Gustafsson, Associate Editor, IEEE Trans. on Circuits and Systems II, -2013.
- Oscar Gustafsson, Associate Editor, Integration, the VLSI Journal.
- Oscar Gustafsson, Guest Editor, Journal of Electrical and Computer Engineering: Hardware Implementation of Digital Signal Processing Algorithms, Hindawi, 2013.
- Bah Hwee Gwee, Associate Editor, IEEE Trans. on Circuits & Systems-I: Regular Papers. (TCAS-I), 2012-2013.
- Håkan Johansson, Associate Editor of IEEE Trans. on Circuits and Systems-I, 2014 - (ongoing).
- Håkan Johansson, Area Editor of the Elsevier J. Digital Signal Processing, 2013- (ongoing).
- Lina Karam, Lead Editor, Proceedings of the IEEE, Special Issue on Perceptual-Based Media Processing (2013).
- Lina Karam, Editorial Board Member, Foundation and Trends in Signal Processing.
- Chi-Wah Kok, Member of Editorial Board, ISRN Signal Processing.
- Chi-Wah Kok, Guest Editor, Vacuum, Elsevier
- Chi-Wah Kok, Guest Editor, Microelectronic Engineering, Elsevier.
- Y Lian, Steering Committee member, IEEE Transactions on Biomedical Circuits and Systems (TBioCAS).
- Y Lian, Steering Committee member, IEEE Transactions on Multimedia (TM).

- Y Lian, Guest Editor, Special Issue for ISCAS 2013, IEEE Transactions on Circuits and Systems I (TCAS-I).
- Y Lian, Associate Editor, IEEE Transactions on Biomedical Circuits and Systems (TBioCAS).
- Zhiping Lin, Editor-in-Chief, Multidimensional Systems and Signal Processing
- Zhiping Lin, Associate Editor, Journal of The Franklin Institute
- Zhiping Lin, Lead Guest Editor, Special Issue on “Extreme Learning Machine on High Dimension and Large Data Applications,” in Mathematical Problems in Engineering.
- Yoshikazu Miyanaga, Associate Editor, Journal of Signal Processing, Japan
- Yoshikazu Miyanaga, Associate Editor, IEEE TCAS-II, since 2013.
- Tokunbo Ogunfunmi, Senior Associate Editor, IEEE Signal Processing Letters (SPL).
- Tokunbo Ogunfunmi, Lead Guest Editor, Special Issue of the IEEE Circuits and Systems, due to be published August 2014.
- Ravi P. Ramachandran, Guest Editor for a Special Issue of the IEEE Circuits and Systems Magazine, Third Quarter, 2014.
- Wan-Chi Siu, Member, Editorial Board, IEEE Signal Processing Society, USA, 2012-2014.
- Wan-Chi Siu, Member of Editorial Board, Journal of VLSI Signal Processing Systems for Signal, Image and Video Technology
- M.N.S. Swamy, Editor-in-Chief, Circuits, Systems and Signal processing (CSSP).
- David Tay, Associate Editor, International Journal of Multidimensional Systems and Signal Processing, Kluwer Academic Press.
- David Tay, Associate Editor, The Scientific World : Signal Processing Section
- Y. J. Yu, Associate Editor, IEEE Trans. on Circuits and Systems II.
- Y. J. Yu, Associate Editor, Circuit Systems and Signal Processing.
- Wei Xing Zheng, Associate Editor, Automatica.
- Wei Xing Zheng, Associate Editor, IET Control Theory & Applications.
- Wei Xing Zheng, Associate Editor, IEEE Transactions on Automatic Control.
- Wei Xing Zheng, Associate Editor, IEEE Transactions on Fuzzy Systems.
- Wei Xing Zheng, Associate Editor, Circuits, Systems and Signal Processing.
- Wei-Ping Zhu, Associate Editor, IEEE Trans. on Circuits and Systems II.
- Wei-Ping Zhu, Guest Editor, International Journal of Antennas and Propagation: Advances in Antenna Technology and Signal Processing for Satellite Communications, Hindawi, 2014

7 IEEE Services

- Oscar Au, Chair, IEEE SPS Multimedia Signal Processing (MMSP) Technical Committee.
- Oscar Au, Member, IEEE SPS Image, Video and Multidimensional Signal Processing (IVMSP) Technical Committee.
- Oscar Au, Member, IEEE SPS Information Forensics and Security (IFS) Technical Committee.
- Oscar Au, Member, IEEE CAS Digital Signal Processing (DSP) Technical Committee.
- Oscar Au, Member, IEEE CAS Multimedia Systems and Applications (MSA) Technical Committee.
- Oscar Au, Member, IEEE CAS Visual Signal Processing and Communications (VSPC) Technical Committee.
- Oscar Au, Member, IEEE ComSoc Multimedia Communications (MMC) Technical Committee.

- Oscar Au, Member, Steering Committee of IEEE International Conference on Multimedia and Expo (ICME).
- Oscar Au, Member, Steering Committee of IEEE Transactions on Multimedia (TMM).
- Oscar Au, Member, IEEE SPS Technical Direction Board (TDB).
- Moncef Gabbouj, Member, IEEE Fourier Committee.
- Moncef Gabbouj, Chairman, IEEE CAS DSP Technical Committee.
- Moncef Gabbouj, Counselor, IEEE Student Branch, Tampere.
- Bah Hwee Gwee, Chair, IEEE Circuits and Systems Singapore Chapter, 2013.
- Dominic Ho is Chair, IEEE SPS Sensor Array and Multichannel (SAM) Technical Committee.
- Dominic Ho is member, IEEE SPS Technical Directions Board.
- Håkan Johansson, Committee member for the selection of the IEEE Circuits and Systems Society Guillemain-Cauer and Darlington best paper awards, 2013.
- Lina Karam, Member of the IEEE Signal Processing Society's Multimedia Technical Committee.
- Lina Karam, Member and Vice Chair of the IEEE Signal Processing Society's Education Technical Committee (2010-2013).
- Lina Karam, Member of the IEEE Signal Processing Society's Nominations and Appointments Committee (2011-2014).
- Lina Karam, Member of the IEEE Publication Services and Products Services Strategic Planning Committee.
- Chi-Wah Kok, Member of the IEEE Electron Device and Solid State Circuit, Hong Kong Chapter.
- Yoshikazu Miyanaga, BoG, CAS Society, 2011-2013.
- Tokunbo Ogunfunmi is Chair-Elect, IEEE CASS Circuits and Systems for Communications (CASCOS) Technical Committee.
- Wan-Chi Siu, Vice-President, IEEE Signal Processing Society (SPS), 2012-2014, USA.
- Thanos Stouraitis, IEEE CAS Society President.
- Wei Xing Zheng serves on the International Steering Committee of the IEEE Asia Pacific Conference on Circuits and Systems (APCCAS).
- Wei-Ping Zhu, Vice-Chair, Montreal Chapter of IEEE Circuits and Systems Society.

8 DSP TC Technically Co-Sponsored Conferences/Symposia/Workshops

- 2013 International Symposium on Communications and Information Technologies (ISCIT 2013, IEEE), Samui Island, Thailand, September 4 - 6, 2013.
- 2013 International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS 2013), Okinawa, Japan, November 12 - 15, 2013.
- 2014 International Symposium on Communications and Information Technologies (ISCIT 2014, IEEE), Incheon, Korea, September 24-26, 2014.
- 2014 International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS 2014), Kuching, Sarawak, Malaysia, December 1-4, 2014.
- 8th European Workshop on Visual Information Processing, 10-12 December 2014, Paris, France.

9 Other Activities

- Oscar Au, Vice President-Technical Activities, Asia Pacific Signal and Information Processing Association (APSIPA)

- Oscar Au, Member, Board of Governor (BoG), Asia Pacific Signal and Information Processing Association (APSIPA)
- Oscar Au, Chair, APSIPA Image, Video and Multimedia (IVM) Technical Committee
- Sankar Basu, Chaired a symposium on Nano-electronics for Renewable Energy, Annual meeting of the American Association for the Advancement of Science Chicago 2013.
- Mrityunjy Chakraborty, Board of Governor, APSIPA (Asia Pacific Signal and Information Processing Association)
- Moncef Gabbouj, Chairman, 8th European Workshop on Visual Information Processing, 10-12 December 2014, Paris, France.
- Mohsin Jamali, Member at Large, IEEE Local Chapter, Toledo, Ohio.
- Yoshikazu Miyanaga, Special Board Member, The Institute of Electronics, Information and Communication Engineers (IEICE), Japan, Engineering Sciences Society (ESS), 2012 - 2014.
- Yoshikazu Miyanaga, Vice-President, The Asia-Pacific Signal and Information Processing Association (APSIPA), 2010-2013.
- Yoshikazu Miyanaga, Advisory Committee Member, The Asia-Pacific Signal and Information Processing Association (APSIPA), since 2013.
- Yoshikazu Miyanaga, International Steering Committee Honorary Chair, International Symposium on Communications and Information Technologies (ISCIT), 2011 - present.
- Yoshikazu Miyanaga, Advisory Committee Member, International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS), 2009 – present.

10 Awards, Honors and News from the TC Members

- **Oscar Au** was promoted to HKIE Fellow, Apr 2013.
- **Oscar Au** was elected as APSIPA Distinguished Lecturer, 2013-2014.
- **Oscar Au**, Best Student Paper Award for "Rate-Distortion Optimized Merge Frame using Piecewise Constant Functions", IEEE Int. Conf. on Image Processing (ICIP), 15-19 Sept. 2013, Melbourne, Australia, co-authored by Wei Dai, Gene Cheung, Ngai-Man Cheung, Antonio Ortega, O.C. Au .
- **Oscar Au**, Best 10% Paper Award for "Depth Map Denoising using Graph-based Transform and Group Sparsity", IEEE Int. Workshop on Multimedia Signal Processing (MMSP), 30 Sept.-2 Oct. 2013, Sardinia, Italy, co-authored by Wei Hu, Xin Li, Gene Cheung, O.C. Au. (Best 10%)
- **Oscar Au**, Best 10% Paper Award for "Reconfigurable Hardware-Friendly CU-Group Based Merge/Skip Mode for High Efficiency Video Coding", IEEE Int. Workshop on Multimedia Signal Processing (MMSP), 30 Sept.-2 Oct. 2013, Sardinia, Italy, co-authored by Wei Dai, O.C. Au, Xing Wen, Wenjing Zhu. (Best 10%)
- **Oscar Au**, Best 10% Paper Award for "Modified distortion redistribution problem for high efficiency video coding (HEVC)", IEEE Int. Workshop on Multimedia Signal Processing (MMSP), 17-19 Sept. 2012, Banff, Canada, co-authored by Lin Sun, O.C. Au, Wei Dai, Ruobing Zou, Sijin Li. (Best 6%)
- **Tian-Bo Deng** received the Best Paper Award at the 2013 IEEE ISCIT (International Symposium on Communications and Information Technology).
- **Paulo Sergio Ramirez Diniz** received the 2014 Charles A. Desoer Technical Achievement Award.

- Academy Professor **Moncef Gabbouj** of Tampere University of Technology (TUT) is one of the 31 new members invited to join the Finnish Academy of Science and Letters on 11 April 2014. The number of members in the Academy is limited, and new members are selected based on their scientific merits.
- The paper of Serkan Kiranyaz, Turker Ince, Alper Yildirim and **Moncef Gabbouj**, entitled “Evolutionary Artificial Neural Networks by Multi-Dimensional Particle Swarm Optimization”, Neural Networks, doi:10.1016/j.neunet.2009.05.013, 8 June 2009, is now the 4th Top most cited paper in Elsevier Neural Networks journal (2009-2014).
- MUVIS Antispoofing algorithm, developed by **Moncef Gabbouj**'s team is ranked 3rd in the 2nd International Competition on Counter Measures to 2D Facial Spoofing Attacks, ICB-2013.
- **Mohsin Jamali** is elected for IEEE CASS Distinguished Lecture Program for the 2014-2015 two-year term.
- **Mohsin Jamali**, The Fulbright-Tampere University of Technology Scholar Award for Real-Time Birds/Bats Tracking for Windfarm Applications.
- **Mohsin Jamali**, Researcher of the year award, Department of Electrical Engineering and Computer Science, The University of Toledo, Toledo, Ohio, April 2014.
- **Y Lian** was selected to receive the 2014 Singapore New Immigrant Outstanding Contribution Awards by Hua Yuan General Association of New Immigrants from China.
- **Y Lian**'s students won the Best Design Award in 2013 IEEE Asian Solid-State Circuits Conference Student Design Contest.
- **I. Pitas** was elevated to EURASIP fellow, 2013.
- **Thanos Stouraitis**, Chair of the IEEE CASS Awards Committee, since January 2014.
- **Alan N. Willson** won Vitold Belevitch Award, IEEE Circuits and Systems Society, 2013
- **Alan N. Willson** won Lockheed Martin Excellence in Teaching Award, UCLA, 2013
- **Alan N. Willson** won “Distinguished Service Award” for being the founder of the UCLA chapter of HKN in 1984, and for serving as the chapter's faculty advisor for the past 30 years to be announced by The Electrical Engineering Honor Society.
- **Wei Xing Zheng** was elevated to IEEE Fellow, January 2014.

11 Contributors

The following DSP TC members contributed to this report:

Oscar Au
 Sankar Basu
 Mrityunjoy Chakraborty
 S. C. Chan
 Linda DeBrunner
 Tian-Bo Deng
 Paulo Sergio Ramirez Diniz
 Moncef Gabbouj
 Bah Hwee Gwee
 Oscar Gustafsson
 Håkan Johansson

Dominic K. Ho
Mohsin Jamali
Lina Karam
Chi-Wah Kok
H. K. Kwan
Yong Lian
Zhiping Lin
Daniel Lun
Yoshikazu Miyanaga
Tokunbo Ogunfunmi
Ravi P. Ramachandran
Thanos Stouraitis
Wan-Chi Siu
M.N.S. Swamy
Akira Taguchi
David Tay
Alan N. Willson
Y. J. Yu
Wei-Xing Zheng
Wei-Ping Zhu