



IEEE Signal Processing Society
Sensor Array and Multichannel (SAM) Technical Committee
Minutes of the ICASSP 2018 Meeting
Calgary, Alberta, Canada – Thursday April 19, 2018; 12:00 PM - 2:00 PM local time
Marriott Hotel, Room: Telus 102

Present TC Members: Karim Abed-Meraim, Alexander Bertrand, André L.F. de Almeida, Fulvio Gini, Martin Haardt (Chair), Jarvis Haupt, Qian He, Wei Liu, Gonzalo Mateos Buckstein, Christoph Mecklenbräuker (Vice-Chair), Piya Pal, Frederic Pascal, Brian Sadler, Yimin Daniel Zhang.

Associate TC Members: Aleksandar Dogandic, Dominic Ho, Pu (Perry) Wang, Peter Willett (Past Chair).

Affiliate TC Members: Guillaume Ginolhac.

Guests: Peter Gerstoft, Kristina Naskovska, Cédric Richard, Zhiguo Shi.

§1. Welcome of New TC Members and Short Introduction

This SAM TC meeting was attended by 14 TC members.
Total number of participants: 23.

new TC members: Angela Alexiou, Alexander Berttand, Nuria Gonzalez Prelcic, Jarvis Haupt, Gonzalo Seco-Granados, Birsen Yazici.

retiring TC members: Volkan Cevher, Mounir Ghogho, Geert Leus, Marius Pesavento, Athina Petropulu, Peter Willett (Past Chair).

returning TC members: Yimin Daniel Zhang, Fulvio Gini, Eduard Jorswieck, Frederic Pascal, Brian Sadler, Ba-Ngu Vo.

TC membership statistics: 10 female, 31 male,
14 from R1-R6, 1 from R7, 16 from R8, 1 from R9, 8 from R10,
9 industry/lab, 32 academic

§2. Report from the Chair

§2.1 Awards

As in previous years, the SAM TC has been very successful in its award nominations. This year, the following SAM TC nominations have been successful:

Signal Processing Best Paper Award: A. Sandryhaila and J. M. F. Moura, "Discrete Signal Processing on Graphs" IEEE Transactions on Signal Processing, April 2013.

Signal Processing Industrial Leader Award: Alfonso Farina.

Signal Processing Best Overview Paper Award: L. Lu, G. Y. Li, A. L. Swindlehurst, A. Ashikhmin and R. Zhang, "An Overview of Massive MIMO: Benefits and

Challenges” IEEE Journal of Selected Topics in Signal Processing, vol. 8, no. 5, October 2014.

Signal Processing Magazine Best Column Award: Ramsey Faragher, “Understanding the Basis of the Kalman Filter Via a Simple and Intuitive Derivation”, IEEE Signal Processing Magazine, vol. 29, no. 5, September 2012.

Signal Processing Sustained Impact Paper Award: Richard Roy and Thomas Kailath, “ESPRIT-estimation of signal parameters via rotational invariance techniques”, IEEE Transactions on Acoustics, Speech and Signal Processing, vol. 37, no. 7, July 1989.

§2.2 Distinguished Lecturers of the IEEE SPS

Rick S. Blum, Wing-Kin (Ken) Ma, and Geert Leus.

Note that Rick S. Blum and Wing-Kin (Ken) Ma have been successfully nominated by the SAM TC. Last year, we could not nominate Geert Leus, since he was an active member of our TC.

§2.3 History of ICASSP submissions in the SAM technical area

Annual figures for SAM submissions as a fraction of total ICASSP submissions:

2018: 148 / 2738 = 5.4 %	Calgary, Canada
2017: 170 / 2697 = 6.3 %	New Orleans, USA
2016: 200 / 2682 = 7.5 %	Shanghai, China
2015: 212 / 2322 = 9.1 %	Brisbane, Australia
2014: 222 / 3544 = 6.3 %	Florence, Italy
2013: 216 / 3362 = 6.4 %	Vancouver, Canada
2012: 171 / 2615 = 6.5 %	Kyoto, Japan

- SAM submissions were unusually high at ICASSP 2015 (Brisbane, Australia), perhaps due to the concentration of SAM surveillance topics in Australia
- SAM submissions are unusually low for this ICASSP 2018 (Calgary, Canada). This might also be due to the fact that CAMSAP 2017 has received a record number of submissions.

§2.4 ICASSP 2018 SAM Data

148 papers submitted (2 of which were transferred in from other tracks before review)
74 accepted, 50% acceptance ratio, as requested by conference organizers
3 IEEE Signal Processing Letters presentations in SAM sessions
Four lecture sessions with six papers each (SAM-L1, ... , SAM-L4)
Six poster sessions with 7-10 papers each (SAM-P1, ... , SAM-P6)

§2.5 ICASSP 2018 Panel Session

An Industry Perspective on Emerging Signal Processing Challenges

§2.6 SAM TC Archiving initiative (Responsible: Waheed U. Bajwa)

- IEEE is willing to house them, link from web page.
- Presently the following workshops have been archived:
SAM 2002, 2010, 2014, 2016
CAMSAP 2005, 2007, 2009, 2011, 2013, 2015, 2017
- Still missing are: SAM 2004, 2006, 2008, 2012

§2.7 Feedback from SAM TC Review (March 9, 2017)

- The Industry/Government Subcommittee should discuss strategies to attract more people from industry and government labs.
- Panel discussion at ICASSP 2018 on open problems for industry was organized to attract new interested people and new members from industry

§3. Workshop Reports

§3.1 CAMSAP 2017 (Santa Barbara Resort, Curacao) report presented by André de Almeida.

- CAMSAP 2017 was a very successful workshop that took place from December 10 – 13, 2018 in the Santa Barbara Beach and Golf Resort, Curacao, Dutch Antilles (<http://www.cs.huji.ac.il/conferences/CAMSAP17/index.php>).
- 202 submissions, 168 accepted, paper acceptance rate 67 % due to the high quality of the submissions, 196 attendees
- 19 special sessions, 10 regular sessions, oral presentations for the special sessions
- 6 plenary talks, including 2 female speakers and one representative from industry
- 38 % of attendees are students (51 student papers accepted)
- 157 k\$ income, 136 k\$ expenses, bulk of it to hotel (all inclusive deal, \$ 525 p.p.)
- surplus 15.51%
- low number of industrial contributions
- Two tutorials:
 - Tutorial by Josef A. Nossek: The Multiport Communication Theory
 - Tutorial by Georgios B. Giannakis: Learning Nonlinear and Dynamic Connectivity and Processes over Graphs
- Topics of special sessions are linked to the plenary talks on the same day
Video recordings of the CAMSAP 2017 plenaries will be viewable on the IEEE SPS Resource Center
- The all-inclusive CAMSAP 2017 registration package was accepted by IEEE SPS in the end.
- An IEEE SPS Questionnaire was distributed to all participants to evaluate the satisfaction of the participants. The results were extremely positive.
- CAMSAP 2017 has received a record number of submissions and has attracted a record number of attendees. There is a table below of the general numbers of previous editions (regular + special session papers).

	Location	Submitted	Accepted	Attendance
2009	Aruba	126	103	114
2011	San Juan, PR	133	133	124
2013	Saint Martin	168	125	140
2015	Cancun	154	136	142
2017	Curacao	202	168	196

- Moreover, we have been able to attract a record number of student participants (38 %).

§4. Progress report on planning of future workshops

§4.1 SAM 2018 progress report presented by Wei Liu

- SAM 2018 will be held in Sheffield, UK, from July 8-11, 2018,
- Website: <http://www.sam2018.group.shef.ac.uk>

- Plenary talks: Michael Elad, Walter Kellermann, Jian Li, Zhiquan Luo, Alle-Jan van der Veen.
- 16 special sessions, 79 regular submissions (with acceptance rate 50% on the regular submissions), the program will accommodate approx. 130 papers.
- Notification of acceptance is scheduled for April 30, 2018
- Final manuscript submission is due on May 13, 2018
- Advance registration opens on May 20, 2018

§4.2 CAMSAP 2019 progress report by Cedric Richard

- Guadeloupe, French West Indies
- Venue Option 1: Le Gosier, La Créole Beach Hôtel & Spa
- Conference Center: 1 large room for 200 people

§5. Proposals for SAM 2020

§5.1 Oaxaca, Mexico, presented by Alexksandar Dogandzic, see presentation slideset

[IEEE SAM 2020 Proposal – Oaxaca.pdf](#)

§5.2 Hangzhou, China, presented by Zhiguo Shi, see presentation slideset

[IEEE SAM 2020 Proposal – Hangzhou.pdf](#)

There was no quorum during the meeting. For this reason, the voting will be carried out by email. The votes for the SAM 2020 proposals will be collected by Christoph Mecklenbräuker, Frederic Pascal, Karim Abed-Meriam.

§6. SPS Activities

§6.1 Data Science Initiative (André de Almeida)

§6.2 Data Collections and Challenges (Peter Willett, Christoph Mecklenbräuker) see presentation slide set [challenges.pptx](#)

§6.3 EDICS Subcommittee

§7. **Report from Chair** (see chair's slides, this not discussed due to lack of time)

§8. **Subcommittee Reports** (see chair's slides, this not discussed due to lack of time)

§9. **Interactions with AASP-TC** (see chair's slides, this not discussed due to lack of time)

§10. **Miscellaneous Discussion Topics** (see chair's slides, this not discussed due to lack of time)

§11. Close of the Meeting

- We plan to have the next SAM TC meeting during SAM 2018 in Sheffield, UK. Hopefully most of the SAM TC members will be able to participate in this meeting.
- The meeting was adjourned at 14:00 (Calgary local time).

SAM TC Meeting @ ICASSP 2018

Martin Haardt

Thursday, April 19, 2018

12:00 PM – 1:30 PM

Calgary, Canada

Location: Telus 102

Agenda

- Welcome
- Report from Chair (1)
 - ⇒ Awards
 - ⇒ ICASSP 2018 submissions
- Workshop Reports
 - ⇒ CAMSAP 2017 (André de Almeida)
 - ⇒ SAM 2018 (Wei Liu)
 - ⇒ CAMSAP 2019 (David Brie, Cédric Richard)
- Proposals for SAM 2020
 - ⇒ Oaxaca, Mexico (Aleksandar Dogandžić)
 - ⇒ Hangzhou, China (Zhiguo Shi)
- SPS Activities
 - ⇒ Data Science Initiative (André de Almeida)
 - ⇒ Data Collections and Challenges (Peter Willett, Christoph Mecklenbräuer)
 - ⇒ EDICS Subcommittee
- Report from Chair (2)
 - ⇒ TC status
 - ⇒ Archiving initiative
 - ⇒ SAM TC Review 2017
- Subcommittee Reports
- Interactions with AASP-TC
- Miscellaneous Discussion Topics

SAM Membership 2018

New Members

- ❑ Angela Alexiou
(University of Piraeus, Greece)
- ❑ Alexander Bertrand
(KU Leuven, Belgium)
- ❑ Nuria González Prelcic
(University of Vigo, Spain)
- ❑ Jarvis Haupt
(University of Minnesota,
Minneapolis)
- ❑ Gonzalo Seco-Granados
(Universitat Autònoma de
Barcelona, Spain)
- ❑ Birsen Yazici
(Rensselaer Polytechnic
Institute, NY)



Retiring Members

- ❑ Volkan Cevher
- ❑ Mounir Ghogho
- ❑ Geert Leus
- ❑ Marius Pesavento
- ❑ Athina Petropulu
- ❑ Peter Willett (Past Chair)

Returning Members

- ❑ Yimin Daniel Zhang
- ❑ Fulvio Gini
- ❑ Eduard Jorswieck
- ❑ Frederic Pascal
- ❑ Brian Sadler
- ❑ Ba-Ngu Vo

Statistics

- ❑ 10 female, 31 male
- ❑ 14 R1-6, 1 R7, 16 R8, 1 R9, 8 R10
- ❑ 9 Industry/Lab, 32 Academic

SAM Membership 2017

New Members

- ❑ Pascal Chevalier
(CNAM & Thales, France)
- ❑ Lei Huang
(College of Information Engineering, China)
- ❑ Yongwei Huang
(Guangdong University of Technology, China)
- ❑ Wei Liu
(University of Sheffield, UK)
- ❑ Vincenzo Matta
(University of Salerno, Italy)
- ❑ Karim Abed Meraim
(Université d'Orléans/ Polytech Orléans, PRISME Lab, France)
- ❑ Antonio Napolitano
(University of Napoli, Italy)



Retiring Members

- ❑ Antonio De Maio
- ❑ Jean-Pierre Delmas
- ❑ Shawn Kraut
- ❑ Pascal Larzabal
- ❑ Ali H. Sayed
- ❑ Erchin Serpedin

Returning Members

- ❑ Mónica Bugallo
- ❑ Yonina Eldar
- ❑ Braham Himed
- ❑ Jian Li
- ❑ Chong Meng Samson See
- ❑ Milica Stojanovic

Statistics

- ❑ 8 female, 33 male
- ❑ 14 R1-6, 1 R7, 17 R8, 1 R9, 8 R10
- ❑ 6 Industry/Lab, 35 Academic

2017 SAM Awards (1)

- **Signal Processing Best Paper Award:**
 - ⇒ A. Sandryhaila and J. M. F. Moura, "Discrete Signal Processing on Graphs" *IEEE Transactions on Signal Processing*, April 2013.

- **Signal Processing Industrial Leader Award:**
 - ⇒ Alfonso Farina.

- **Signal Processing Best Overview Paper Award:**
 - ⇒ L. Lu, G. Y. Li, A. L. Swindlehurst, A. Ashikhmin and R. Zhang, "An Overview of Massive MIMO: Benefits and Challenges" *IEEE Journal of Selected Topics in Signal Processing*, vol. 8, no. 5, October 2014.

2017 SAM Awards (2)

- **Signal Processing Magazine Best Column Award:**
 - ⇒ Ramsey Faragher, “Understanding the Basis of the Kalman Filter Via a Simple and Intuitive Derivation”, *IEEE Signal Processing Magazine*, vol. 29, no. 5, September 2012.

- **Signal Processing Sustained Impact Paper Award:**
 - ⇒ Richard Roy and Thomas Kailath, “ESPRIT-estimation of signal parameters via rotational invariance techniques”, *IEEE Transactions on Acoustics, Speech and Signal Processing*, vol. 37, no. 7, July 1989.

2018 Distinguished Lecturers of the IEEE SPS and their Topics (1)

□ **Rick S. Blum**

- ⇒ Cyber Attacks on Internet of Things Systems
- ⇒ Cyber Attacks on Sensor Systems for Estimation and Detection
- ⇒ Cyber Attacks on Smart Grid Systems
- ⇒ Improved IEEE 1588 Synchronization using Estimation Theory and Low Complexity
- ⇒ Realistic Performance Bounds on Passive Radar Systems
- ⇒ Ordering for Distributed Estimation and Detection

□ **Wing-Kin (Ken) Ma**

- ⇒ Semidefinite Relaxation: From Classical Concepts to Recent Advances
- ⇒ Hyperspectral Unmixing in Remote Sensing: Learn the Wisdom There and Go Beyond (Machine Learning Included)
- ⇒ MIMO Transceiver Designs and Optimization: Beyond Beamforming and Perfect Channel Information

2018 Distinguished Lecturers of the IEEE SPS and their Topics (2)

□ Geert Leus

- ⇒ Compressive Sensing for Power Spectral Estimation
- ⇒ Sparse Sensing for Statistical Inference
- ⇒ Graph Signal Processing: Filtering and Sampling
- ⇒ Stationary Graph Processes and Spectral Estimation
- ⇒ Subsampling for Graph Power Spectral Estimation
- ⇒ Prediction-Correction Methods for Time-Varying Optimization
- ⇒ Compressive Ultrasound Imaging

History of ICASSP SAM Submissions

- Annual figures for SAM submissions as a fraction of total ICASSP submissions:
 - ⇒ 2018: 147 / 2738 = 5.4 % Calgary, Canada
 - ⇒ 2017: 170 / 2697 = 6.3 % New Orleans, USA
 - ⇒ 2016: 200 / 2682 = 7.5 % Shanghai, China
 - ⇒ 2015: 212 / 2322 = 9.1 % Brisbane, Australia
 - ⇒ 2014: 222 / 3544 = 6.3 % Florence, Italy
 - ⇒ 2013: 216 / 3362 = 6.4 % Vancouver, Canada
 - ⇒ 2012: 171 / 2615 = 6.5 % Kyoto, Japan
- SAM was unusually high in Brisbane (ICASSP 2015), perhaps due to the concentration of SAM surveillance topics in Australia

ICASSP 2018 SAM Data

- 148 papers submitted (2 were transferred in from other tracks before the review)
- 74 accepted. This means a 50 % acceptance rate, as the conference organizers requested.
- Additionally there will be 3 Signal Processing Letters presented in SAM sessions.
- Four 6-paper lecture sessions, six poster sessions with 7 to 10 papers each.

- L1 - Multi-Channel and Tensor-Based Signal Processing
- L2 - Source Localization, Classification and Tracking I
- L3 - Direction of Arrival Estimation
- L4 - MIMO Systems and MIMO Radar
- P1 - Radar Array Processing
- P2 - Beamforming
- P3 - Multi-Channel Imaging, Hyperspectral and Distributed Processing
- P4 - Signal Detection and Parameter Estimation
- P5 - DOA Estimation and Array Calibration
- P6 - Source Localization, Classification and Tracking II

ICASSP 2018 SAM Sessions (Lecture)

L1 - Multi-Channel and Tensor-Based Signal Processing

Time: Tuesday, April 17, 13:30 - 15:30

Location: Glen 203-204

Session Chairs: André L.F. de Almeida, Federal University of Ceará, Brazil

L2 - Source Localization, Classification and Tracking I

Time: Tuesday, April 17, 16:00 - 18:00

Location: Macleod D

Session Chairs: Piya Pal, UC San Diego, USA

L3 - Direction of Arrival Estimation

Time: Wednesday, April 18, 13:30 - 15:30

Location: Glen 203-204

Session Chairs: Wei Liu, University of Sheffield, UK

L4 - MIMO Systems and MIMO Radar

Time: Wednesday, April 18, 16:00 - 18:00

Location: Glen 203-204

Session Chairs: Christoph Mecklenbräuer, Vienna University of Technology, Austria

ICASSP 2018 SAM Sessions (Poster 1)

P1 - Radar Array Processing (10 papers)

Time: Thursday, April 19, 08:30 - 10:30

Location: Poster Area H

Session Chair: Fulvio Gini, University of Pisa, Italy

P2 - Beamforming (10 papers)

Time: Thursday, April 19, 13:30 - 15:30

Location: Poster Area I

Session Chair: Alexander Bertrand, KU Leuven, Belgium

P3 - Multi-Channel Imaging, Hyperspectral and Distributed Processing (8 papers)

Time: Thursday, April 19, 16:00 - 18:00

Location: Poster Area I

Session Chair: Karim Abed-Meraim, Université d'Orleans, France

ICASSP 2018 SAM Sessions (Poster 2)

P4 - Signal Detection and Parameter Estimation (7 papers)

Time: Friday, April 20, 08:30 - 10:30

Location: Poster Area G

Session Chair: Waheed Bajwa, Rutgers University, USA

P5 - DOA Estimation and Array Calibration (10 papers)

Time: Friday, April 20, 13:30 - 15:30

Location: Poster Area H

Session Chair: Martin Haardt, Ilmenau University of Technology, Germany

P6 - Source Localization, Classification and Tracking II (10 papers)

Time: Friday, April 20, 16:00 - 18:00

Location: Poster Area H

Session Chair: Jarvis Haupt, University of Minnesota, USA

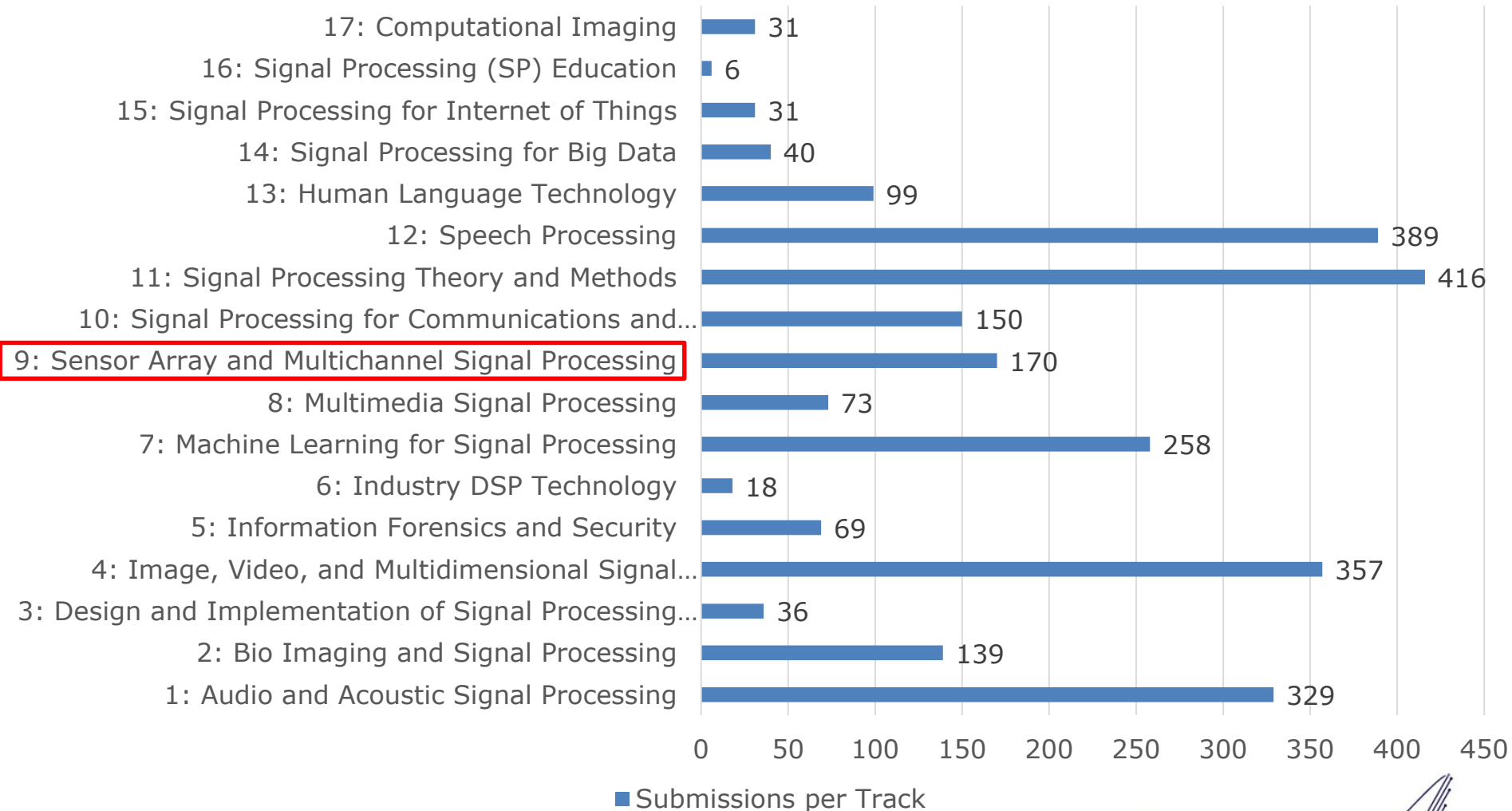
ICASSP 2018 Panel Session: An Industry Perspective on Emerging Signal Processing Challenges

Time: Wednesday, April 18, 2018, 15:00 - 17:00
Location: Glen 208-209
Session Chairs: Yonina Eldar, Peter Willett, Martin Haardt

- ❑ Tom Baran: Open problems in tera-scale signal processing, Co-founder/CEO Lumii and MIT
- ❑ Gene Franz: Open problems in Hardware, retired TI Principal Fellow, Founder and CTO, Octavo Systems and Rice
- ❑ Fernando Mujica: Open problems in Embedded Implementations, Apple Inc. and Stanford
- ❑ Brian Sadler: Open problems in Wireless Autonomous Systems, Army Research Laboratory
- ❑ Mariappan Nadar: Open problems in Artificial Intelligence for Medical Imaging, Senior Director of Research Siemens Healthineers
- ❑ Bhuvana Ramabhadran: Open problems in Speech and Language Processing, Google

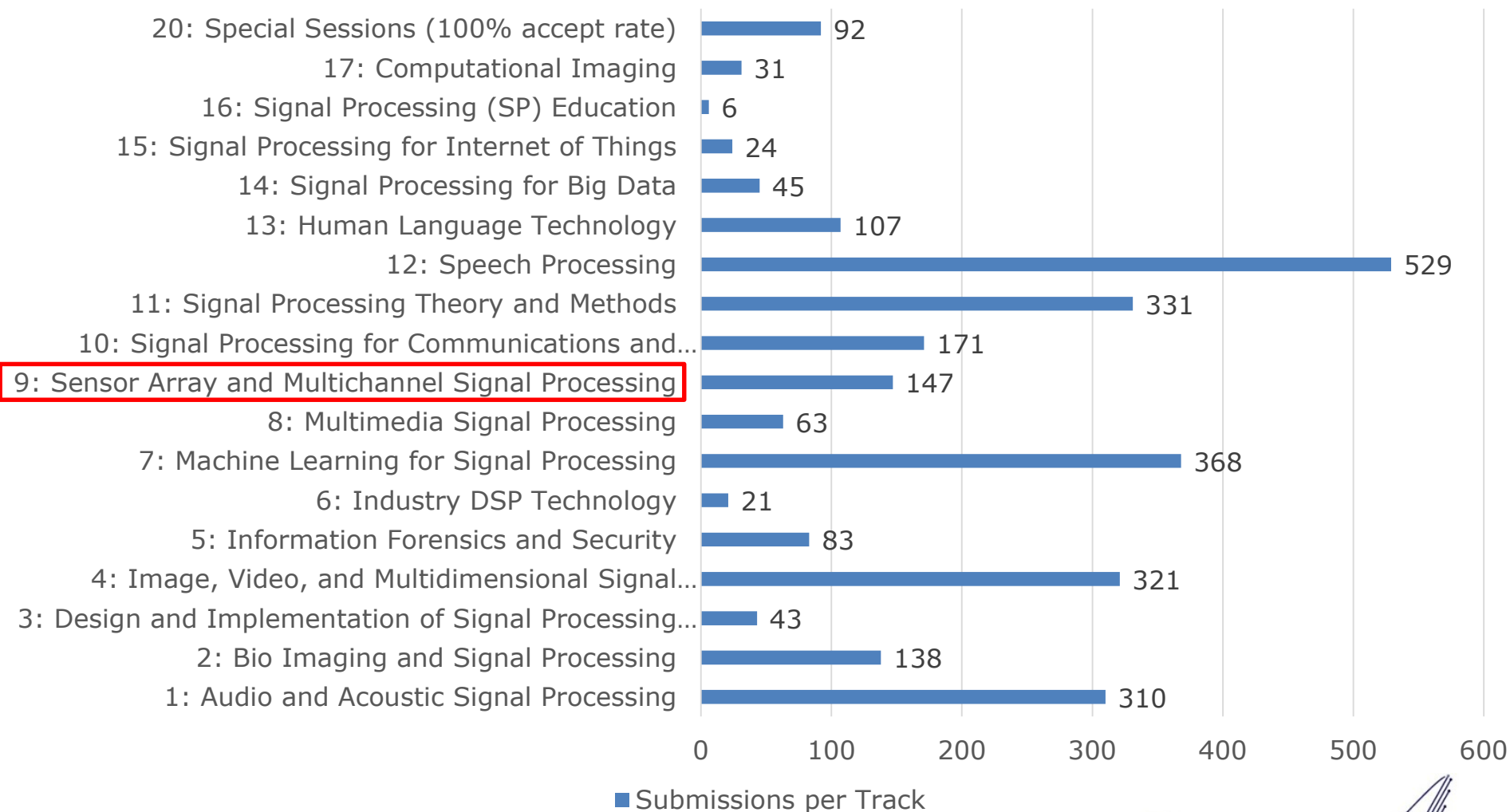
ICASSP 2017 Submissions (data from TPC Chairs)

Submissions per Track



ICASSP 2018 Submissions (data from TPC Chairs)

Submissions per Track



SAM Workshops

❑ CAMSAP 2017

⇒ Curacao, Dutch Antilles (André de Almeida)

❑ SAM 2018

⇒ Sheffield, U.K. (Wei Liu)

❑ CAMSAP 2019

⇒ Guadeloupe, French West Indies (David Brie, Cédric Richard)

❑ Proposals for SAM 2020

⇒ Oaxaca, Mexico (Aleksandar Dogandžić)

⇒ Hangzhou, China (Zhiguo Shi)

❑ Proposed Dates for Other SPS Workshops

⇒ SPAWC 2020, Atlanta, USA, June 21 – 24, 2020

⇒ SSP 2020, Rio de Janeiro, Brazil, July 12 – 15, 2020

SPS Activities

□ SPS Data Science Initiative

⇒ André de Almeida

□ Data Collections and Challenges

⇒ Peter Willett, Christoph Mecklenbräuer

□ Unification of EDICS within the SPS

⇒ Creation of a new EDICS Subcommittee

Initiatives

□ Archiving of SAM Workshop Websites

- ⇒ Responsible: Waheed U. Bajwa
- ⇒ Past workshops are often housed on University servers, and eventually are removed.
- ⇒ Lost TC memory (and memories).
- ⇒ IEEE is willing to house them, link from web page.
- ⇒ Presently the following workshops have been archived:
 - CAMSAP 2017
 - SAM 2016
 - CAMSAP 2015
 - SAM 2014
 - CAMSAP 2013
 - CAMSAP 2011
 - SAM 2010
 - CAMSAP 2009
 - CAMSAP 2007
 - CAMSAP 2005
 - SAM 2002
- ⇒ Still missing are: SAM 2012, SAM 2008, SAM 2006, and SAM 2004

□ SAM TC Review on March 9, 2017 at 14:00.

Feedback from the SAM TC Review 2017

M. REVIEW COMMITTEE REMARKS REGARDING THE TC.

- The SAM TC has solid plans to achieve its goals and broaden its visibility, diversity, and impact.

Feedback from the SAM TC Review 2017

M. REVIEW COMMITTEE REMARKS REGARDING THE TC.

- SAM TC has created a YouTube channel to archive lectures given at its workshops/conferences
(after obtaining permissions from the speakers)
 - ⇒ Waheed U. Bajwa
- We start the video recordings with the CAMSAP 2017 plenary lectures
- We need to consult with the IEEE SPS Conference Board to obtain SPS permission.
 - ⇒ The IEEE SPS has its own resource center and might want to only put select lectures on YouTube and others on the resource center.

Feedback from the SAM TC Review 2017

K. Comments on Strengths and Weaknesses

□ Membership Diversity:

⇒ gender diversity: good

⇒ regional diversity: good

⇒ low number of members from industry and government labs.

⇒ should be discussed in the Industry/Government Subcommittee

Feedback from the SAM TC Review 2017

K. Comments on Strengths and Weaknesses

- SAM TC Signal Processing Student Cup Proposal 2018: “Signal Processing for Cracking Cryptographic Algorithms”
 - ⇒ by *Yi Han, Saman Zonouz, Athina Petropulu*
 - ⇒ unfortunately not (yet) successful
 - ⇒ new proposal should be discussed in the Technical Directions Subcommittee for 2019

- We would like to increase the pool of student affiliate members and increase their participation in the TC activities.
 - ⇒ should be discussed in the Students Subcommittee

Feedback from the SAM TC Review 2017

K. Comments on Strengths and Weaknesses

- ❑ Jobs Marketplace. SAM TC has relatively few postings in the Job Marketplace.
- ❑ We expect the number of postings will improve as the number of members from industry increases.
 - ⇒ should be discussed in the Industry/Government Subcommittee
- ❑ Further ideas?

Feedback from the SAM TC Review 2017

K. Comments on Strengths and Weaknesses

- We feel that SAM-TC communicates effectively with its membership through its well-maintained website and its numerous meetings.
- Nonetheless, it needs to reach out more regularly to SPS membership through its Newsletter. This requires attention by the Chair, the Vice-Chair, and the Newsletter subcommittee.

Subcommittees 2018

- ❑ **Technical Directions** (Thomas Wong, Jian Li, Gonzalo Seco-Granados, Birsen Yazici)
- ❑ **Awards** (Antonio Napolitano, Yonina Eldar, Jarvis Haupt, Lei Huang)
- ❑ **Nominations and Elections** (Fulvio Gini, Eduard Jorswieck, Yimin Zhang, Vincenzo Matta)
- ❑ **Workshops** (Mónica Bugallo, André L. F. de Almeida, Wei Liu, Karim Abed-Meraim)
- ❑ **Webmaster** (Waheed U. Bajwa, Alexander Bertrand)
- ❑ **Newsletter** (Christoph Mecklenbräuker, Hongbin Li, Nuria González Prelicic)
- ❑ **Membership** (Piya Pal, Yongwei Huang)
- ❑ **Industry/Government** (Braham Himed, Chong Meng Samson-See, Pascal Chevalier)
- ❑ **Education** (Ami Wiesel, Milica Stojanovic, Ba-Ngu Vo)
- ❑ **Student** (to be filled, Philip Schniter)

(underline means chair)

Subcommittees 2018

Area Chairs

- ❑ Applications of SAM processing
- ❑ Beamforming and space-time processing
- ❑ Detection, estimation, and source separation
- ❑ Multi-antenna and multi-channel comm.
- ❑ Radar array processing
- ❑ Sensor array processing
- ❑ Sensor networks

Brian Sadler
Martin Haardt
Karim Abed-Meraim
Chong-Yung Chi
Fauzia Ahmad
Xavier Mestre
Ashish Pandharipande

Four Regional Representatives

- ❑ 1. USA (1-6)
- ❑ 2. Canada/Latin America (7/9)
- ❑ 3. Europe/Mid East/Africa (8)
- ❑ 4. Asia/Pacific (10)

Gonzalo Mateos
Jacob Benesty
Frederic Pascal
Qian He

Interaction with AASP-TC (1)

- ❑ Requested by AASP due to some commonality in interests, especially in microphone array topical area.
- ❑ IEEE SPS does encourage cooperation among its TCs.
- ❑ **Near-term start**
 - ⇒ SAM and AASP have organized a special session on “Speaker Localization in Dynamic Real-Life Environments” at ICASSP 2017 ...
- ❑ **Medium-term initiatives**
 - ⇒ SAM may co-sponsor HSCMA (Hands-Free Communication and Microphone Arrays) Workshop
 - Workshop is every 3 years
 - the last one just before ICASSP 2017 in San Francisco, CA
 - not financially sponsored by IEEE
 - ⇒ Special issue in the IEEE Journal of Selected Topics in Signal Processing
- ❑ **Long-term thoughts**
 - ⇒ AASP might be interested in co-sponsorship of SAM
 - ⇒ Create some joint EDICS ???

Interaction with AASP-TC (2)

- ❑ **Special issue** in the *IEEE Journal of Selected Topics in Signal Processing*
- ❑ Topic
 - ⇒ Acoustic source localization and tracking in dynamic real-life scenes
- ❑ Guest editors
 - ⇒ Sharon Gannot, Bar-Ilan University, Israel
 - ⇒ Martin Haardt, Technische Universität Ilmenau, Germany
 - ⇒ Walter Kellermann, Friedrich-Alexander Universität Erlangen-Nürnberg, Germany
 - ⇒ Peter Willett, University of Connecticut, USA
- ❑ Submission deadline
 - ⇒ July 1, 2018

Challenges and Data Collections

ICASSP 2018

Patrick Naylor and Walter Kellermann

PUBLICATIONS & RESOURCES

- › Publications & Resources
- › Publications
- › **Data & Challenges**
- › Submit a Manuscript
- › Guidelines
- › Information for Authors
- › Special Issue Deadlines
- › Overview Articles
- › Top Accessed Articles
- › SPS Newsletter
- › SigPort
- › SPS Resource Center
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[Submit a Manuscript](#)

IEEE Signal Processing Society Data & Challenges

[Challenges](#) | [Data](#)

Organizing Committee/TC Challenges

IEEE AASP TC Challenge

[\(LOCATA 2018\) Acoustic Source Localization and Tracking !\[\]\(870f5d5e9c0d57485634be3ecf52f3ca_img.jpg\)](#)

[\(SPCup 2017\) The Signal Processing Cup Challenge !\[\]\(4fe57c3593bf1b21d272ae7ac8dfaf77_img.jpg\)](#)

[\(DCASE 2016\) Detection and Classification of Acoustic Scenes and Events Challenge !\[\]\(0d5ec72f61334709c3fc9450209b754f_img.jpg\)](#)

[\(ACE 2014\) The Acoustic Characterisation of Environments \(ACE\) Challenge !\[\]\(b792654f2cef9719eabeb6c5be00811e_img.jpg\)](#)

[\(DCASE 2012\) Detection and Classification of Acoustic Scenes and Events !\[\]\(7d1d6890825e83a6a4a51febe2dcc7f3_img.jpg\)](#)

[\(CHiME 2013\) 2nd CHiME Speech Separation and Recognition Challenge !\[\]\(2bae76de5ebbd5c4d7d47162f1673734_img.jpg\)](#)

IEEE IFS TC Challenge

[First Image Forensics Challenge !\[\]\(84f47badaad7772cd95667a7c387a639_img.jpg\)](#)

[Break Our Steganographic System !\[\]\(28f72b996fc97883dfd9d4e8b1b16b4e_img.jpg\)](#)

[Break Our Watermarking System - 2nd Ed. !\[\]\(5d954b3e270654ad8ab0d5913161c03c_img.jpg\)](#)

[Break Our Watermarking System - 1st Ed. !\[\]\(aff7c69c44a5e015f18c35867ef3f5c3_img.jpg\)](#)

IEEE IVMSP TC Challenge

[\(ICIP 2017\) Light Field Image Coding Grand Challenge !\[\]\(1ed10657a19f9137278430c48fd18626_img.jpg\)](#)

IEEE SPL TC Challenge

[\(CHiME 2011\) 1st CHiME Speech Separation and Recognition Challenge !\[\]\(a25a22d88c5882f4a20f36103df86562_img.jpg\)](#)

[\(CHiME 2012\) 2nd CHiME Speech Separation and Recognition Challenge !\[\]\(06b7456efb47d301bca6298603e7f4fc_img.jpg\)](#)

[\(CHiME 2016\) 4th CHiME Speech Separation and Recognition Challenge !\[\]\(2885535958616e9ec6b97903614c334b_img.jpg\)](#)

[\(CHiME 2018\) 5th CHiME Speech Separation and Recognition Challenge !\[\]\(0aaea5eb29549a0c507a518cbdd818a0_img.jpg\)](#)

Data and Challenges Web Page Analytics

- “it is good to note that despite the data-challenges page being one of many pages on the SPS website, it still does have interested visitors and the number of visits pretty high given a specific topic related page.”
- *Rupal Bhatt, Web Administrator*

- Unique page views (UPVs), last 6 months

URL	UPVs
http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=79	1,525
/publications-resources/data-challenges	1,454
http://ieeauthorcenter.ieee.org/create-your-ieee-article/use-authoring-tools-and-ieee-article-templates/	1,311

(Partial) List of Challenges

Caveat: there is no systematic way to capture this information

- AASP
 - (IWAENC 2018) LOCATA
 - DCASE 2018
 - Metrics for spatial audio (proposal initiated)
- MLSP
 - Annual Workshop including MLSP Data Competition
- DISPSystems
 - not a challenge but a forum(?)
- IVMSP
 - (ICIP 2017) Light Field Image Coding Grand Challenge
- SPL
 - (Interspeech 2018) 5th CHiME Speech Separation and Recognition Challenge

Current Status

- strong challenge-based activity
- numerous associated data collections
- workshops, special sessions

Under Consideration

- provide a programme at SPS level supporting challenges

SPS Challenges Programme

Aims

- to stimulate new and adventurous research into timely problems within the technical scope of SPS, thereby driving forward the scientific development of signal processing;
- to encourage research and development with comparable and repeatable results;
- to identify the state-of-the-art methods in defined signal processing tasks and their performance;
- to disseminate widely within the society and externally the results of Challenges and subsequent scientific insights.

SPS Challenges Programme

Protocol

- adopt best practice from among the TCs/SIGs
- normalize across SPS
- under Challenges and Data Collections (CDC) subcommittee

Governance

- Challenges and Data Collections subcommittee of TDB
 - responsible for the successful operation of an on-going series of challenges
- membership of this committee
 - balanced to represent the scope of the topics within SPS
 - including representation of both industry and academia
- CDC operates generally with the same rules as a TC

SPS Challenges Programme

Process

- Proposals -> Review -> Active -> Evaluation -> Reporting
- Stage 1 – Proposals
 - Calls for Challenges are regularly issued by the CDC
 - prospective organizers submit proposals to organize future challenges
 - CDC publishes guidelines on the information required in a proposal and the list of criteria against which the proposal will be reviewed

SPS Challenges Programme

Proposals should normally include

- textual description of the Challenge and its context (1 to 2 pages);
- clear formulation of the problem to be addressed;
- evaluation methodology leading to an objective figure of merit (FoM) and, where appropriate, a software tool to compute FoM;
- a development dataset which represents the task(s) of the Challenge and which will be made open access to registered participants;
- a test dataset which also represents the task(s) of the Challenge but which remains private for the purposes of evaluation on unseen data;
- a commitment to provide a website to disseminate the Challenge itself and, eventually, the results;
- a commitment to evaluate the submitted results and publish the comparison on the website and elsewhere as appropriate;
- a proposed schedule for the Challenge (launch, deadline for results submission, schedule for comparative results publication);
- a proposed plan for data hosting together with control and monitoring of access;
- a proposed financial plan for the Challenge including, where appropriate, details of sponsorship agreements.

SPS Challenges Programme

Process

- Stage 2 – Review and Refinement
 - Round 1 - CDC makes an initial assessment and proposals that are deemed to address the aims are forwarded to a TC/SIG chosen by the CDC
 - Round 2 - The chosen TC/SIG makes a detailed review of the proposal, led by the TC/SIG's Challenges Subcommittee Chair or alternative
 - aim of the review is to assess, and contribute to improving, the scientific value of the proposed Challenge and to check the methodology and practical feasibility.
 - review process may sometimes request modifications to the proposed Challenge as a condition of acceptance.

SPS Challenges Programme

Process

- Stage 3 – Active
 - after launching a Challenge, researchers can register to enter the challenge
 - registration is free of charge and open to all

- Stage 4 – Evaluation
 - at the end of the Challenge, the organizers will coordinate a comparative evaluation employing the defined FoM

SPS Challenges Programme

Process

- Stage 5 – Reporting and Dissemination
 - comparative evaluation results are then published with optional anonymity
 - Challenge organizers will normally organize a dissemination event linked to IEEE SPS in the form of, for example, a dedicated workshop, satellite workshop or conference special session
 - dissemination event is attended by the Challenge participants to share, discuss and gain insight from the results and the proceeding should be subsequently made available with open access
 - wherever feasible, discounted registration fees apply to SPS members
 - CDC will work with the challenge organizers towards publication of the Challenge and its outcome in relevant IEEE publications
 - Challenge organizers' website will be linked from the CDC webpage

SPS Challenges Programme

Data Hosting Platforms

- Chosen by the Challenge organizers to suit the needs
- Free-of-charge and open access during the challenge
- Important features
 - Registered downloads, licensing, DOIs, provide supporting information and documentation, links to other documents, citable
- Available long-term after the Challenge at zero or minimal cost

IEEE *DataPort*[™]

zenodo

SPS Challenges Programme

Benefits of SPS-level Challenges compared to what is happening now

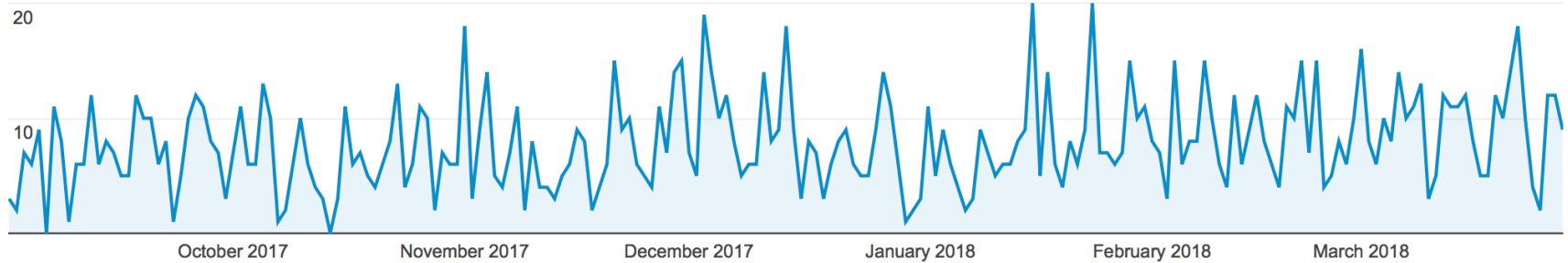
- TDB has overview of quality via CDC subcommittee
- opportunity to stimulate activity in other TCs/SIGs
- better ongoing maintenance of web links and pages (many are now broken)
- enhanced resourcing and sponsorship opportunities
- support of membership widely across SPS technical scope
- long-term impact complementary to publications

SPS Challenges Programme

Schedule

- Challenge organizers should propose an appropriate schedule
- strong motivation to synchronize the Challenge's schedule to make the best use of exposure through ICASSP etc.
- Challenge should be open for between 6 and 18 months

● Pageviews



▼ This data was filtered with the following filter expression: **/data-challenges**

Page	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	1,643 % of Total: 0.38% (429,352)	1,459 % of Total: 0.43% (339,337)	00:02:12 Avg for View: 00:01:56 (14.16%)	412 % of Total: 0.23% (181,831)	52.27% Avg for View: 48.17% (8.51%)	40.17% Avg for View: 42.35% (-5.15%)	\$0.00 % of Total: 0.00% (\$0.00)
1. /publications-resources/data-challenges	1,638 (99.70%)	1,454 (99.66%)	00:02:12	410 (99.51%)	52.28%	40.05%	\$0.00 (0.00%)
2. /login?destination=publications-resources/data-challenges	3 (0.18%)	3 (0.21%)	00:00:03	0 (0.00%)	0.00%	66.67%	\$0.00 (0.00%)
3. /publications-resources/data-challenges/	2 (0.12%)	2 (0.14%)	00:00:00	2 (0.49%)	50.00%	100.00%	\$0.00 (0.00%)

Rows 1 - 3 of 3