

SPS Fellows and Award Winners Recognized

In this column of *IEEE Signal Processing Magazine*, 39 IEEE Signal Processing Society (SPS) members are recognized as IEEE Fellows and award recipients are announced.

39 SPS members elevated to Fellow

Each year, the IEEE Board of Directors confers the grade of Fellow on up to one-tenth of 1% of the voting Members. To qualify for consideration, an individual must have been a Member, normally for five years or more, and a Senior Member at the time for nomination to Fellow. The grade of Fellow recognizes unusual distinction in IEEE's designated fields.

The IEEE SPS congratulates the following 39 SPS members who were recognized with the grade of Fellow as of 1 January 2018.

Fauzia Ahmad, Philadelphia, Pennsylvania, for contribution to through-the-wall radar imaging.

Kohtaro Asai, Tokyo, Japan, for contributions to video coding development and standardization.

Gustavo Camps-Valls, Valenciana, Spain, for contributions to machine learning in remote sensing.

Emmanuel Candes, Stanford, California, for contributions to sparse and low-rank signal and image processing.

Chip Hong Chang, Singapore, for contributions to hardware security.

Karen Egiazarian, Tampere, Finland, for contributions to image and video denoising and restoration.

Daniel Ellis, New York, New York, for contributions to speech, audio, and music processing.

Pascal Frossard, Lausanne, Switzerland, for contributions to adaptive image and video representation, coding, and communication.

Mounir Ghogho, Rabat, Morocco, for contributions to synchronization algorithms for communication systems.

Yihong Gong, Xi'an City, China, for contributions to pattern recognition and multimedia content analysis.

Martin Haardt, Ilmenau, Germany, for contributions to multiuser MIMO communications and tensor-based signal processing.

Aleksandar Kavcic, Honolulu, Hawaii, for contributions to signal processing and coding in data storage.

Brian E.D. Kingsbury, Yorktown Heights, New York, for contributions to acoustic models for automatic speech recognition.

Ajay Kumar, Kowloon, Hong Kong, for contributions to noncontact hand-based biometrics recognition.

Riccardo Leonardi, Brescia, Italy, for contributions to image and video compression and multimedia semantic content analysis.

Ben Liang, Toronto, Canada, for contributions to mobility modeling and resource management in wireless networks.

Chia-Wen Lin, Hsinchu, Taiwan, for contributions to multimedia coding and editing.

Olgica Milenkovic, Urbana, Illinois, for contributions to genomic data compression.

Javier Ortega-Garcia, Madrid, Spain, for contributions to biometrics for forensic speaker verification and signature recognition.

Hairong Qi, Knoxville, Tennessee, for contributions to collaborative signal processing in sensor networks.

Tony Q.S. Quek, Singapore, for contributions to heterogeneous and wireless networks.

Brian Rigling, Dayton, Ohio, for contributions to synthetic aperture radar imaging.

Kim Roberts, New York, New York, for contributions to digital signal processing for coherent optical communication systems.

Justin Romberg, Atlanta, Georgia, for contributions to compressive sensing.

Badrinath Roysam, Houston, Texas, for contributions to image processing algorithms for biological microscopy.

Kevin Sangston, Atlanta, Georgia, for contributions to coherent detection of radar signals in clutter.

Hiroshi Sawada, Nara, Japan, for contributions to blind source separation of speech and audio signals.

Bjoern Schuller, Passau, Germany, for contributions to computer audition.

Andrew Senior, London, United Kingdom, for contributions to pattern recognition in speech, computer vision, and biometrics.

Shihab Shamma, College Park, Maryland, for applications of signal processing to auditory neuroscience.

Weifeng Su, Buffalo, New York, for contributions to multiple-input, multiple output wireless communications and cooperative networks.

Matthew Valenti, Morgantown, West Virginia, for contributions to cooperative diversity and development of distributed turbo codes.

Sergiy Vorobyov, Espoo, Finland, for contributions to optimization in robust signal processing.

Stefan Winkler, Singapore, for contributions to perceptual video quality measurement.

Dong Xu, Sydney, Australia, for contributions to recognition and retrieval of multimedia and biometric data.

Dong Yu, Bothell, Washington, for contributions to context-dependent automatic speech recognition.

Changshui Zhang, Beijing, China, for contributions to semisupervised learning for signal processing.

Lei Zhang, Hong Kong, for contributions to sparsity-based image modeling and perceptual image quality assessment.

Tong Zhou, Beijing, China, for contributions to robust identification and estimation of control systems.

The following individuals were evaluated by the SPS, but are not SPS members.

Alexander Bronstein, Tel Aviv, Israel, for contributions to three-dimensional geometric processing in imaging.

Hany Farid, Hanover, New Hampshire, for contributions to digital forensics.

Michael Riley, New York, New York, for contributions to automatic speech recognition using weighted finite-state transducers.

2017 IEEE SPS Awards presented in Calgary, Canada

The IEEE SPS congratulates the following SPS members who will receive the Society's prestigious awards during the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2018) on 15–20 April in Calgary, Canada.



Alex Acero

The Society Award honors outstanding technical contributions in a field within the scope of the IEEE SPS and outstanding leadership within that field. The Society Award comprises a plaque, a certificate, and a monetary award of US\$2,500. It is the highest-level award bestowed by the IEEE SPS. This year's recipient is Alex Acero, "for contributions to speech technology and leadership in the signal processing community."



Patrick Flandrin



Ahmed H. Tewfik

The Technical Achievement Award is presented this year to Patrick Flandrin "for contributions to the theory and application of nonstationary signal analysis" and to Ahmed H. Tewfik "for contributions to digital watermarking, multimedia, and wavelets." The Technical Achievement Award honors a person who, over a period of years, has made outstanding technical contributions to theory and/or practice in technical areas within the scope of the Society, as demonstrated by publications, patents, or recognized impact on this field. The prize for the award is US\$1,500, a plaque, and a certificate.



Mari Ostendorf



John H. Cozzens

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The Meritorious Service Award is presented this year to Mari Ostendorf and John H. Cozzens, "for exemplary service to and leadership in the Signal Processing Society." The award comprises a plaque and a certificate; judging is based on dedication, effort, and contributions to the Society.

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The Signal Processing Society Education



C.-C. Jay Kuo

Award honors educators who have made pioneering and significant contributions to signal processing education. Judging is based on a career of meritorious achievement in signal processing education as exemplified by writing scholarly books and texts, course materials, and papers on education; inspirational and innovative teaching; and creativity in the development of new curricula and methodology. The award comprises a plaque, a monetary award of US\$1,500, and a certificate. The recipient of the SPS Education Award is C.-C. Jay Kuo, "for contributions to signal, image and multimedia education."



Chirag Nitinchandra Paunwala

The Meritorious Regional/Chapter Service Award honors the outstanding contributions of any member of the Society to regional activities of the SPS. Judging is based on dedication, effort, and contributions made to activities aimed at promoting the technical and educational activities of the SPS in one specific Region/Chapter as well as its local membership participation. The award comprises a plaque and a certificate. The Meritorious Regional/Chapter Service Award is being awarded for the first time to Chirag Nitinchandra Paunwala, "for exemplary service to and leadership in the Signal Processing Society."



Alfonso Farina

The Industrial Leader Award recognizes an industry business or technical leader whose leadership has resulted in major and outstanding advances or new directions using signal processing technologies within the scope of the Society. This award is for executive leadership resulting in major advances and new directions using signal processing in a business area. The prize is US\$1,500, a plaque, and a

certificate. The recipient of the Industrial Leader Award is Alfonso Farina “for contributions to radar array processing and industrial leadership.”



Richard F. Lyon

The Industrial Innovation Award is presented this year to Richard F. Lyon “for contributions in integrated circuits, cameras, and audio processing.” The Industrial Innovation Award recognizes an individual or team at any level who were industry employees whose technical contributions have resulted in significant advances using signal processing technologies within the scope of the Society. Selection will be based on major industrial accomplishments, standards, deployment of important processes or products, etc., that are of substantial benefit to the public, which use signal processing technologies and are visible beyond the company or institution where the contribution was made. The award is open to individuals at any level who were industry employees who played a significant role in the technical contribution at the time of the accomplishments being recognized. The prize is US\$1,500 per awardee (up to a maximum of US\$4,500 per award) and a plaque and certificate.

The IEEE Signal Processing Magazine Best Paper Award honors the author(s) of an article of exceptional merit and broad interest on a subject related to the Society’s technical scope and appearing in the Society’s magazine. The prize comprises US\$500 per author (up to a maximum of US\$1,500 per award) and a certificate. This year, the IEEE Signal Processing Magazine Best Paper Award recipients are Abdelhak M. Zoubir, Visa Koivunen, Yacine Chakhchoukh, and Michael Muma for their article “Robust Estimation in Signal Processing: A Tutorial-Style Treatment of Fundamental Concepts,” published in *IEEE Signal Processing Magazine*, vol. 29, no. 4, July 2012.

The IEEE Signal Processing Magazine Best Column Award honors the author(s) of a column of exceptional merit and broad interest on a subject related to the Society’s technical scope

and appearing in the Society’s magazine. In the event that there are more than three authors, the maximum prize is divided equally among all authors and each receives a certificate. This year, the IEEE Signal Processing Magazine Best Column Award recipient is Ramsey Faragher for his article “Understanding the Basis of the Kalman Filter Via a Simple and Intuitive Derivation,” published in *IEEE Signal Processing Magazine*, vol. 29, no. 5, September 2012.

The Sustained Impact Paper Award honors the author(s) of a journal article of broad interest that has had sustained impact over many years on a subject related to the Society’s technical scope. The prize consists of US\$500 per author (up to a maximum of US\$1,500 per award) and a certificate. To be eligible for consideration, an article must have appeared in one of the IEEE SPS transactions or *IEEE Journal of Selected Topics in Signal Processing*, in an issue predating the spring awards board meeting by at least ten years (typically held in conjunction with ICASSP). This year, the Sustained Impact Paper Award recipients are 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.

The Donald G. Fink Overview Paper Award honors the author(s) of a journal article of broad interest that has had substantial impact over several years on a subject related to the Society’s technical scope. A paper considered for the award should present an overview of a method or theory with technical depth and application perspective. It should have a multi-year record of impact and also be relevant to current researchers and/or practitioners. The prize consists of US\$500 per author (up to a maximum of US\$1,500 per award) and a certificate. This year, the Donald G. Fink Overview Paper Award recipients are Lu Lu, Geoffrey Ye Li, A. Lee Swindlehurst, Alexei Ashikhmin, and Rui Zhang for “An Overview of Massive MIMO: Benefits and Challenges,” *IEEE Journal of Selected Topics in Signal Processing*, vol. 8, no. 5, October 2014.

Six Best Paper Awards were awarded, honoring the author(s) of a paper of exceptional merit dealing with a subject related to the Society’s technical scope and appearing in one of the Society’s transactions, irrespective of the author’s age. The prize is US\$500 per author (up to a maximum of US\$1,500 per award) and a certificate. Eligibility is based on a five-year window preceding the year of election, and judging is based on general quality, originality, subject matter, and timeliness. Up to six Best Paper Awards may be presented each year. This year, the awardees are

- Aliaksei Sandryhaila and José M.F. Moura, “Discrete Signal Processing on Graphs,” *IEEE Transactions on Signal Processing*, vol. 61, no. 7, April 2013.
- Stamatios Lefkimmiatis, Aurélien Bourquard, and Michael Unser, “Hessian-Based Norm Regularization for Image Restoration With Biomedical Applications,” *IEEE Transactions on Image Processing*, vol. 21, no. 3, March 2012.
- Vincent Christlein, Christian Riess, Johannes Jordan, Corinna Riess, and Elli Angelopoulou, “An Evaluation of Popular Copy-Move Forgery Detection Approaches,” *IEEE Transactions on Information Forensics and Security*, vol. 7, no. 6, December 2012.
- Ulugbek S. Kamilov, Vivek K. Goyal, and Sundeep Rangan, “Message-Passing De-Quantization with Applications to Compressed Sensing,” *IEEE Transactions on Signal Processing*, vol. 60, no. 12, December 2012.
- Foad Sahrabi and Wei Yu, “Hybrid Digital and Analog Beamforming Design for Large-Scale Antenna Arrays,” *IEEE Journal of Selected Topics in Signal Processing*, vol. 10, no. 3, April 2016.
- Nasser Mohammadiha, Paris Smaragdakis, and Arne Leijon, “Supervised and Unsupervised Speech Enhancement Using Nonnegative Matrix Factorization,” *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 21, no. 10, October 2013.

The Young Author Best Paper Award honors the author(s) of an especially meritorious paper dealing with a subject

related to the Society's technical scope and appearing in one of the Society's transactions and who, upon date of submission of the paper, is younger than 30 years of age. The prize is US\$500 per author (up to a maximum of US\$1,500 per award) and a certificate. Eligibility is based on a three-year window preceding the year of election, and judging is based on general quality, originality, subject matter, and timeliness. Six Young Author Best Paper Awards are being presented this year:

- Jie Xu and Liang Liu, for the paper co-authored with Rui Zhang, "Multiuser MISO Beamforming for Simultaneous Wireless Information and Power Transfer," *IEEE Transactions on Signal Processing*, vol. 62, no. 18, September 2014.
- Konstantin Dragomiretskiy, for the paper coauthored with Dominique Zosso, "Variational Mode Decomposition," *IEEE Transactions on Signal Processing*, vol. 62, no. 3, February 2014.
- Wei Shi and Kun Yuan, for the paper coauthored with Qing Ling, Gang Wu and Wotao Yin, "On the Linear Convergence of the ADMM in Decentralized Consensus Optimization," *IEEE Transactions on Signal Processing*, vol. 62, no. 7, April 2014.
- Morteza Mardani, for the paper coauthored with Gonzalo Mateos and Georgios B. Giannakis, "Subspace Learning and Imputation for Streaming Big Data Matrices and Tensors," *IEEE Transactions on Signal Processing*, vol. 63, no. 10, May 2015.
- Mojtaba Soltanalian, for the paper coauthored with Petre Stoica, "Designing Unimodular Codes Via Quadratic Optimization," *IEEE Transactions on Signal Processing*, vol. 62, no. 5, March 2014.
- Roeen Enbar, for the paper coauthored with Eran Eiding and Tal Hassner, "Age and Gender Estimation of Unfiltered Faces," *IEEE Transactions on Information Forensics and Security*, vol. 9, no. 12, December 2014.

The IEEE Signal Processing Letters Best Paper Award honors the author(s) of a letter article of exceptional merit and broad interest on a subject related to the Society's technical scope and appearing in *IEEE Signal Processing Letters*. The prize consists of US\$500 per author (up to a maximum of US\$1,500 per award) and a certificate. To be eligible for consideration, an article must have appeared in *IEEE Signal Processing Letters* in an issue predating the spring awards board meeting by five years (typically held in conjunction with ICASSP). Judging is on the basis of technical novelty, the research significance of the work, and quality and effectiveness in presenting subjects in an area of high impact to the Society's members. The recipients of the IEEE Signal Processing Letters Best Paper Award are Anish Mittal, Rajiv Soundararajan, and Alan C. Bovik, for "Making a 'Completely Blind' Image Quality Analyzer," *IEEE Signal Processing Letters*, vol. 20, no. 3, March 2013.

2017 Chapter of the Year Award

Both the IEEE SPS Vancouver Chapter and the IEEE SPS Santa Clara Valley Chapter have been selected as the recipients of the 2017 Chapter of the Year Award, which will be presented at the ICASSP 2018 Awards Ceremony in Calgary, Canada. The award is presented annually to a Chapter that has provided its membership with the highest quality of programs, activities, and services. Both the IEEE SPS Vancouver Chapter and the IEEE SPS Santa Clara Valley Chapter will receive a certificate and a check in the amount of US\$1,000 to support local Chapter activities. Both Chapters will publish an article in a future issue of *IEEE Inside Signal Processing e-Newsletter*.

SPS members receive 2018 IEEE awards

The IEEE has announced the recipients of IEEE Technical Field Awards for contributions or leadership in specific fields of interest of the IEEE.

The following SPS members have received IEEE Technical Field Awards this year.

The IEEE James L. Flanagan Speech and Audio Processing Technical Field Award will be presented to Mari Ostendorf "for contributions to statistical and computational models for analysis, interpretation, and synthesis in speech and language processing."

The IEEE Fourier Award for Signal Processing will be presented to Peter Stoica "for broad contributions to research and education in statistical signal processing and its applications."

The IEEE Gustav Robert Kirchhoff Award will be presented to Alan N. Willson, Jr. "for fundamental contributions to the theory and design of nonlinear circuits and signal processing systems."

The IEEE Kiyo Tomiyasu Award will be presented to J. Nicholas Laneman "for contributions to wireless network communication theory, algorithms, and architectures."

In addition, the IEEE has announced the recipients of the 2018 IEEE medals. IEEE medals are the highest honor of awards presented by the IEEE. The medals will be presented at the 2018 IEEE Honors Ceremony. Two SPS members have been awarded with the IEEE medals for 2018.

The IEEE Jack S. Kilby Signal Processing Medal, awarded for outstanding achievements in signal processing, will be presented to Bede Liu (Princeton University, New Jersey) "for sustained contributions to the analysis and the development of low-complexity realizations of digital signal processing algorithms."

The IEEE James H. Mulligan, Jr. Education Medal, awarded for outstanding contributions to education, will be presented to Delores M. Etter (Southern Methodist University, Dallas, Texas) "for contributions to engineering through innovative textbooks on problem solving with computing languages and software tools."

