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Pieter Abbeel
University of California - Berkeley
Berkeley, CA, USA

for contributions to apprenticeship and reinforcement learning for robotics and autonomous systems

Pamela Ann Abshire
Silver Spring, MD, USA

for contributions to CMOS biosensors

Haithem Abu-rub
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for contributions to power electronic converters for renewable energy applications

Erik Agrell
Chalmers University of Technology
Goteborg, Sweden

for contributions to coding and modulation in optical communications

Fauzia Ahmad
Temple University
Philadelphia, PA, USA

for contribution to through-the-wall radar imaging

Anastasia Ailamaki
Ecole Polytechnique Federale de Lausanne
Lausanne, Switzerland

for contributions to hardware-conscious database systems and scientific data management

Matteo Albani
Firenze, Italy

for contributions to the uniform geometrical theory of diffraction

Andrew Alleyne
University of Illinois
Urbana, IL, USA

for contributions to the control of thermal management systems

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Pietro Andreani
Lund University
Lund, Sweden

for contributions to CMOS integrated voltage-controlled oscillators

Walid Aref
Purdue University
West Lafayette, IN, USA

for contributions to spatio-temporal database indexing and query processing

Kohtaro Asai
Mitsubishi Electric Corporation
Tokyo, Japan

for contributions to video coding development and standardization

Hajime Asama
University of Tokyo
Tokyo, Japan

for contributions to distributed autonomous robotic systems

Bertan Bakkaloglu
Arizona State University-Tempe
Scottsdale, AZ, USA

for contributions to radio frequency circuits

Bijnan Bandyopadhyay
IIT Bombay
Mumbai, India

for contributions to discrete-time, multi-rate, output feedback sliding-mode control

Paul Barford
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for contributions to Internet measurement and security

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for contributions to millimeter-wave and terahertz micromachining

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US Dept. of Air Force
Rome, NY, USA

for leadership in aerospace information fusion systems

Glenn Boreman
University North Carolina at Charlotte
Charlotte, NC, USA

for contributions to optical and infrared antenna technologies

Vicente Boria
Universidad Politecnica de Valencia
Valencia, Spain

for contributions to high-power microwave filters and multiplexers

Timothy Boykin
University of Alabama
Huntsville, AL, USA

for contributions to atomistic models for semiconductor device simulation

Maurizio Bozzi
University of Pavia
Pavia, Italy

for contributions to substrate integrated waveguides and integrated periodic structures

Oliver Brock
Technische Universität Berlin
Berlin, Germany

for contributions to mobile manipulation and grasping

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Alexander Bronstein
Tel Aviv University
Tel Aviv, Israel

for contributions to three-dimensional geometric processing in imaging

Charles Bunting
Oklahoma State University
Stillwater, OK, USA

for educational contributions to electromagnetic compatibility and reverberation chambers

Karen Butler
Texas A&M University
College Station, TX, USA

for contributions to expanding minority participation in power systems education

Marco Caccamo
University of Illinois at Urbana-Champaign
Urbana, IL, USA

for contributions to the theory and applications of hard real-time multicore computing

Yigang Cai
Naperville, IL, USA

for innovations in high-speed wireless networks

Giuseppe Calafiore
Politecnico di Torino
Torino, Italy

for contributions to probabilistic methods for robust control design

Jeffrey Calame
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for contributions to high-power microwave and millimeter-wave amplifiers enabled by composite dielectric materials

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Linda Camp
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Bloomington, IN, USA

for research in human-centered risk and security

Mark Campbell
Cornell University
Ithaca, NY, USA

for contributions to control and estimation theory for autonomous systems

Gustavo Camps-Valls
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Valenciana, Spain

for contributions to machine learning in remote sensing

Emmanuel Candes
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for contributions to sparse and low-rank signal and image processing

Leo Casey
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for contributions to high-speed power electronic interfaces for grid-tied distributed resources

Sherman Chan
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for contributions to power system modeling and analysis tools for protective relaying

Chip Hong Chang
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for contributions to hardware security

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Kun-Yung Chang
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for contributions to transceivers for high-performance networking and high-density memories

Ni-Bin Chang
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for contributions to computational techniques for the analysis of environmental sustainability

Tsung-Yung Chang
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for application of SRAM technology to low-power and high-performance computing

Kuan-Neng Chen
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for contributions to 3D integrated circuit and packaging technologies

Wen-Hua Chen
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Loughborough, UK

for contributions to the applications of nonlinear disturbance observer based control

Yi-Jan Emery Chen
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for contributions to monolithic RF CMOS power amplifiers and transceiver frontends

Yiran Chen
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for contributions to spintronic memory

Po-Tai Cheng
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for contributions to power converters for microgrid applications

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Richard Chernock
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for leadership in next generation digital TV

Yiu-Ming Cheung
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for contributions to cluster analysis and visual computing

Carla Chiasserini
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for contributions to energy efficiency and cooperation in wireless networks

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for contributions to data analytics for smart metering

Gary Christensen
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for contributions to medical image registration and analysis

Oscar Cordon
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for contributions to genetic and evolutionary fuzzy systems

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for leadership in consumer electronics digital storage technology

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Jian Dai
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for contributions to reconfigurable and metamorphic mechanisms

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for contributions to intelligent transportation systems and autonomous vehicles

Ewa Deelman
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Marina Del Rey, CA, USA

for contributions to scientific workflow management

Andreas Demosthenous
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for contributions to integrated circuits for active medical devices

Jaydev Desai
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for contributions to medical and swarm robotics

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for contributions to silicon-based photonic devices and integrated circuits

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for contributions to control and estimation theory for autonomous systems

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Alan Edelman
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for contributions to the development of technical-computing languages

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for contributions in computer architecture performance analysis and modeling

Karen Egiazarian
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for contributions to image and video denoising and restoration

Daniel Ellis
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for contributions to speech, audio, and music processing

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for contributions to distributed generation planning, operation and control

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for contributions to computational optimal control theory

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for contributions to multiple participant-multiple objective decision making and decision support systems

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for contributions to digital forensics

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for contributions to neuromuscular electrophysiology and neurorehabilitation

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for contributions to augmented reality and computer graphics

James Feltes
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for contributions to modelling the dynamic response of power generation systems

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for contributions to random wireless networks

James Friend
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for contributions to acoustics, microfluidics and microactuation

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

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for contributions to embedded and medical device security

Akira Fujiwara
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for contributions to silicon single-electron devices

Thomas Furness
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for leadership in virtual and augmented reality

Andrea Galtarossa
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for contributions to low polarization mode dispersion fibers

Dave Garrett
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for contributions to beam-forming architectures and implementations

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for contributions to technologies for streaming and controlling digital video

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for contributions to synchronization algorithms for communication systems

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for contributions to multi-agent programming in robotics

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for contributions to pattern recognition and multimedia content analysis

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for contributions to passive macromodeling for signal and power integrity

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for contributions to brain-computer interfaces and applications

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for contributions to stability analysis for time-delay fuzzy systems and intelligent control of nonlinear systems

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for contributions to performance optimization and resource management of parallel and distributed systems

Yongxin Guo
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for contributions to wideband printed antennas

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Seoul, Korea

for contribution to sensorless control of AC drives

Martin Haardt
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for contributions to multi-user MIMO communications and tensor-based signal processing

Harald Haas
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for leadership in the design of visible-light and wireless communication systems

Hashem Hashemian
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for leadership in developing technologies for nuclear reactor monitoring

Haibo He
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Kingston, RI, USA

for contributions to adaptive learning

Tian He
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for development and optimization of networked sensing systems

Jeffrey Herd
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Lexington, MA, USA

for leadership in the development of low-cost phased array technology

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Yoshihito Hirano
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for leadership in the development of 1.5-micron wind sensing lidar

Michel Houssa
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for contributions to materials characterization for advanced MOSFETs

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for contributions to control with applications to aerospace and robotic systems

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for contributions to guidance and control of air and space vehicles

David Howe
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for contributions to global time synchronization

David Hsu
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for contributions to robot motion planning

Biao Huang
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for contributions to and application of Bayesian soft-sensing for control performance monitoring

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Qingming Huang
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for contributions to multimedia content analysis and visual perceptual processing

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for contributions to social-based opportunistic networks

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for contributions to CAD tools for reconfigurable computing

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for contributions to solid-state image sensors

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for contributions to image-guided therapeutic focused ultrasound

Leon Iasemidis
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for developments in epileptic seizure prediction and closed-loop brain stimulation

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for contributions to the utilization of synchrophasors in energy management systems

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Somesh Jha
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for contributions to the application of formal methods to security

Jiaya Jia
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for contributions to deblurring techniques in computational photography

Lynette Jones
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for contributions to tactile and thermal displays

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for leadership in piezoresponse force microscopy for nanoscale imaging

George Karypis
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for contributions to graph partitioning and data mining

Aleksandar Kavcic
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for contributions to signal processing and coding in data storage

Noriko Kawakami
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for contributions to large-capacity power converters and applications

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for leadership in microwave and millimeter wave compound semiconductor technology and heterogeneous integration with silicon

Angelos Keromytis
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for contributions to network security systems

Sung Kim
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for contributions to the design of microfabricated neural prosthetic devices

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for contributions to acoustic models for automatic speech recognition

Roberta Klatzky
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for contributions to human visual, auditory, and haptic perception in robotics and virtual environments

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and Microintegration IZM
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for leadership in heterogeneous integration and microelectronic packaging

Xenofon Koutsoukos
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for contributions to design of resilient cyber-physical systems

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Michael Krames
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for leadership in GaN-based light-emitting device physics and its commercialization

D. Richard Kuhn
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for contributions to access control and combinatorial test methods

Ajay Kumar
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for contributions to non-contact hand-based biometrics recognition

Isaac Lagnado
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for leadership in the development of silicon-on-sapphire technology

Pablo Laguna Lasosa
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for contributions to cardiac biomedical signal processing

Susan Land
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for leadership in software product development

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for contributions to signal processing for cellular modems

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Riccardo Leonardi
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for contributions to image and video compression and multimedia semantic content analysis

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for contributions to bidirectional converters for utility applications and high efficiency photovoltaic converters

Qun Li
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for contributions to ad-hoc network routing and sensor networks

Tao Li
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for contributions to sustainable and power-efficient computer architectures

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for contributions to physical synthesis and modeling of integrated circuits

Ben Liang
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for contributions to mobility modeling and resource management in wireless networks

Jiao Li-cheng
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for contributions to artificial neural networks and evolutionary computation

2018 Newly Elevated Fellows

Chia-Wen Lin
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for contributions to multimedia coding and editing

Wei Lin
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for contributions to nonlinear control systems

Zhouchen Lin
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for contributions to low-rank data modeling and image processing

Giuseppe Lipari
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for contributions to reservation-based real-time scheduling

Chee Wee Liu
National Taiwan University
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for contributions to high-mobility germanium and silicon-germanium MOSFETs

Jie Liu
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for contributions to wireless sensing

Ming Liu
Institute of Microelectronics of Chinese Academy of Sciences
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for contributions to the development of resistive non-volatile memories

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Shengyi Liu
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for application of multifunctional power conversion and power source integration to aircraft

Guo-Quan Lu
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Blacksburg, VA, USA

for development of materials and packaging technologies for power electronics modules

Jie Lu
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Sydney, NSW, Australia

for contributions to fuzzy machine learning and decision support systems

Wei Lu
University of Michigan
Ann Arbor, MI, USA

for contributions to development of neuromorphic systems

Yilong Lu
Nanyang Tech University
Singapore, Singapore

for contributions to array antenna techniques in radar systems

John Luginsland
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for contributions to space-charge limited flow physics, coherent radiation sources, and computational plasma physics

Richard Lukaszewski
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for contributions to the application of power electronic devices for variable frequency drives

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Xiaobing Luo
Huazhong University of Science & Technology
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for contributions to packaging of optoelectronic devices

Shugen Ma
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Kusatsu-Shi, Japan

for contributions to the design and control of environment-adaptive robots

Zhenqiang Ma
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for contributions to flexible and biodegradable microwave electronics

Udaya Madawala
University of Auckland
Auckland, New Zealand

for contributions to power electronics for bi-directional wireless power transfer

Guoqiang Mao
University of Technology Sydney
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for contributions to localization algorithms for wireless networks

Vladimir Marik
Czech Institute of Informatics
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for leadership in industrial applications of cybernetics

Sonia Martinez
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for contributions to the geometric mechanics and control

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Saverio Mascolo
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for contributions to modeling and control of congestion in packet networks

Andrea Massa
University of Trento
Trento, Italy

for contributions to phased arrays and electromagnetic inverse scattering

Sanu Mathew
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for leadership in computer arithmetic datapath and security circuits

Earl Mc Cune
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for leadership in polar modulation circuits and signals

Paul Meaney
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for contributions to microwave tomography and its translation to clinical use

Deepankar Medhi
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for contributions to optimization and the design of computer-communication networks

Russell Meier
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Milwaukee, WI, USA

for contributions to global on-line engineering education

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Tommaso Melodia
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Boston, MA, USA

for contributions to underwater acoustic and multimedia networks

Abraham Mendelson
Technion-Israel Institute of Technology
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for contributions to power-aware architecture and value prediction for program execution

Olgica Milenkovic
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for contributions to genomic data compression

Jelena Misic
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for contributions to modeling and performance evaluation in wireless communications

Andrea Montanari
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for applications of statistical physics to coding theory

Mehul Motani
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for contributions to wireless communications and sensor networks

Hideki Motoyama
Central Research Institute of Electric Power Industry Corporation
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for contributions to lightning protection and insulation coordination of electric power systems

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Saibal Mukhopadhyay
Georgia Institue of Technology
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for contributions to energy-efficient and robust computing systems design

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Chinese University of Hong Kong
Shatin NT, Hong Kong

for contributions to network information theory

Girish Nair
University of Melbourne
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for contributions to control and information in networked dynamical systems

Hans Peter Nee
KTH Royal Institute of Technology
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for contributions to silicon carbide power electronics and modular multilevel converters

Silviu-Iulian Niculescu
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for research on the effects of delays in system dynamics

Konstantina Nikita
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for contributions to bioelectromagnetics and implantable antennas for medical applications

Barbara Oakley
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for outreach through online engineering pedagogy

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Hideo Ohno
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for contributions to materials and device design for spintronics

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for contributions to memetic computation and applications

Hidetoshi Onodera
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for contributions to variation-aware design and analysis of integrated circuits

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for contributions to biometrics for forensic speaker verification and signature recognition

Lawrence Ozarow
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for contributions to capacity characterization of fading and feedback channels

Hitay Ozbay
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for contributions to robust control for infinite dimensional systems

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for contributions to the understanding of radiation effects in electronics

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for contributions to power systems analysis software

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for contributions to cellular standards

Jignesh Patel
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for contributions to high-performance spatial data analysis methods

Constantinos S. Pattichis
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for contributions to medical diagnostic and mobile health systems

Shanthi Pavan
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for contributions to delta sigma modulators and analog filters

George Pavlou
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for contributions to resource management and content-based networking

Joseph Pawlowski
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for contributions to memory system interfaces

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for contributions to touch current measurement and electric shock protection

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for contributions to transoceanic fiber-optic transmission systems

Josien Pluim
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for contributions to medical image analysis

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for contributions to low-power circuits and systems

John Potter
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for contributions to ice-ocean interaction, oceanography, and underwater communication

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for contributions in biophotonics, nanophotonics and novel biomedical technology

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for contributions to multi-hop wireless networks

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for contributions to collaborative signal processing in sensor networks

Jianmin Qu
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for contributions to design and reliability analysis for microelectronic packaging

Ronghai Qu
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for contributions to flux modulations machines and wind generators

Tony Quek
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for contributions to heterogeneous and wireless networks

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for leadership in simulation methods for antenna placement and co-site analysis

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for contributions to network management and associated routing systems

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for contributions to synthetic aperture radar imaging

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Michael Riley
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for contributions to automatic speech recognition using Weighted Finite-State Transducers

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for contributions to digital signal processing for coherent optical communication systems

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for contributions to compressive sensing

Luca Roselli
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for contributions to sustainable radio-frequency modules for wireless sensor networks

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for contributions to power and reliability management of Systems-on-Chip

Eugeniusz Rosolowski
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for contributions to education in power system modeling and protection

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for contributions to image processing algorithms for biological microscopy

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Karen Rudie
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for contributions to the supervisory control theory of discrete event systems

Kazuhiro Saitou
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for contributions in computational assembly and disassembly design of mechanical products

Seiji Samukawa
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for contributions to damage-free plasma processing for nano-device manufacturing

Kevin Sangston
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for contributions to coherent detection of radar signals in clutter

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for leadership in power electronics and energy storage for electric vehicles

Rahul Sarpeshkar
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for contributions to ultra low-power biomedical electronics

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for contributions to lens and millimeter wave antennas

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for contributions to blind source separation of speech and audio signals

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for contributions to the design of oscillators and synthesized signal sources

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for contribution to transmission and generation failure modeling

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for contributions to high bandwidth optical interconnects

Bjoern Schuller
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for contributions to computer audition

Assaf Schuster
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for contributions to cloud computing

Andrew Senior
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for contributions to pattern recognition in speech, computer vision, and biometrics

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Sanjit Seshia
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for contributions to formal methods for inductive synthesis and algorithmic verification

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for applications of signal processing to auditory neuroscience

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for contributions to medical image analysis

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for contributions to the development of NAND flash memory

Jiwu Shu
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for contributions to dependable, high-performance storage systems architecture

Hava Siegelmann
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for contributions to neural computation

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Niskayuna, NY, USA

for contributions to ultrasound transducer technology for medical imaging

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Gregory Snider
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for contributions to single electron based computing technology

Yan Solihin
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Raleigh, NC, USA

for contributions to shared cache hierarchies and secure processors

Min Song
Michigan Technological University
Houghton, MI, USA

for leadership in supporting wireless networking and radio spectrum access

Miguel Angel Sotelo Vazquez
Universidad de Alcala
Madrid, Spain

for contributions to intelligent vehicles for road infrastructure inspection

Siddhartha Srinivasa
Carnegie Mellon University
Pittsburgh, PA, USA

for contributions to robotic manipulation and human-robot interaction

Salvatore Stolfo
Columbia University
New York, NY, USA

for contributions to machine learning-based computer security

Peter Stone
University of Texas- Austin
Austin, TX, USA

for contributions to reinforcement learning, multiagent systems, and robotics

2018 Newly Elevated Fellows

David Stork
Rambus
Sunnyvale, CA, USA

for contributions to pattern recognition and image analysis

Weifeng Su
State University of New York at Buffalo
Buffalo, NY, USA

for contributions to multi-input multi-output wireless communications and cooperative networks

Rahul Sukthankar
Google, Inc.
Mountain View, CA, USA

for contributions to video classification

Hong-Bo Sun
Jilin University
Jilin, China

for contributions to laser nanofabrication and ultrafast spectroscopy

Hongbin Sun
Tsinghua University
Beijing, China

for contributions to algorithms and technologies for energy management systems

Shuji Tanaka
Tohoku University
Sendai, Japan

for contributions to micro-electromechanical systems for acoustic wave devices, physical sensors, and power generation

Mark Tehranipoor
University of Florida
Gainesville, FL, USA

for contributions to integrated circuits security and trust

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Juergen Teich
University of Erlangen-Nuremberg
Erlangen, Germany

for contributions to hardware/software co-design for embedded systems

Marina Thottan
Nokia- Bell Labs
New Providence, NJ, USA

for leadership in high-speed internet-protocol networks

Yingli Tian
City College of NY-SUNY
New York, NY, USA

for contributions to automatic facial expression analysis and human activity understanding

Jocelyne Troccaz
TIMC-IMAG Laboratory
La Tronche Cedex, France

for contributions to robotics and imaging for medical applications

John Tsotsos
York University
Toronto, ON, Canada

for contributions to active vision and computational models of visual attention

Marcelo Valdes
GE Industrial Solutions
Cary, NC, USA

for contributions to improving the safety and reliability of low voltage power systems

Matthew Valenti
West Virginia University
Morgantown, WV, USA

for contributions to cooperative diversity and development of distributed turbo codes

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Victor Veliadis
PowerAmerica
Raleigh, NC, USA

for contributions to development of silicon carbide power devices

Giovanni Vigna
University of California- Santa Barbara
Santa Barbara, CA, USA

for contributions to Internet security and cybercrime prevention

Sergiy Vorobyov
Aalto University
Espoo, Finland

for contributions to optimization in robust signal processing

Haixun Wang
Google Research
Palo Alto, CA, USA

for contributions to knowledge bases for text understanding

Li-C Wang
University of California- Santa Barbara
Santa Barbara, CA, USA

for contributions to statistical timing analysis for integrated circuits

Peng Wang
Nanyang Technological University
Singapore, Singapore

for contributions to power system reliability and hybrid AC/DC micro-grids

Xudong Wang
Shanghai Jiao Tong University
Shanghai, China

for contributions to wireless mesh networks

2018 Newly Elevated Fellows

Yu Wang
University of North Carolina- Charlotte
Charlotte, NC, USA

for contributions to computational techniques for the analysis of environmental sustainability

Robert Weikle
University of Virginia-Charlottesville
Charlottesville, VA, USA

for contributions to millimeter-wave and submillimeter-wave electronics and instrumentation for terahertz frequencies

Daniel Weile
University of Delaware
Newark, DE, USA

for contributions to computational electromagnetics

Mark Weiss
Florida International University
Miami, FL, USA

for advancements in computer science education

Stephen Welby
US Department of Defense
Washington, DC, USA

for leadership in defense and aerospace systems engineering

Thomas Weller
University of South Florida
Tampa, FL, USA

for contributions to modeling and design of passive microwave circuits and components

Qihao Weng
Indiana State University
Terre Haute, IN, USA

for contributions to urban remote sensing

2018 Newly Elevated Fellows

David Whelan
University of California, San Diego
La Jolla, CA, USA

for leadership in space-based navigation, synchronization, and surveillance

Jean-Pierre Wigneron
Université de Bordeaux
Villenave d'Ornon, France

for contributions to surface modeling in passive microwave remote sensing

James Wilkinson
University of Southampton
Southampton, UK

for contributions to integrated photonics

Laurie Williams
North Carolina State University
Raleigh, NC, USA

for contributions to reliable and secure software engineering

Stefan Winkler
Singapore, Singapore

for contributions to perceptual video quality measurement

Philip Winston
Southern Company
Atlanta, GA, USA

for development of standards in power system protection reliability

Stephen T. Wong
Houston Methodist Hospital
Houston, TX, USA

for leadership in drug discovery, systems biology, bioinformatics, and health analytics

2018 Newly Elevated Fellows

Rebecca Wright
Rutgers, The State University of New Jersey
Piscataway, NJ, USA

for contributions to applied cryptography and privacy

Shien-Yang Wu
Taiwan Semiconductor Manufacturing Company, Limited
Hsinchu, Taiwan

for leadership in CMOS process integration

Huikai Xie
University of Florida
Gainesville, FL, USA

for contributions to micro-electromechanical optical scanning systems

Tao Xie
University of Illinois at Urbana–Champaign
Urbana, IL, USA

for contributions to software testing and analytics

Hao Xin
University of Arizona
Tucson, AZ, USA

for contributions to electromagnetic metamaterials and 3D printing of metamaterial structures

Dong Xu
University of Sydney
Sydney, NSW, Australia

for contributions to recognition and retrieval of multimedia and biometric data

Jianbin Xu
Chinese University of Hong Kong
Shatin NT, Hong Kong

for contributions to nanoscale electronic materials and devices

2018 Newly Elevated Fellows

Yang Yang
Shanghai Institute of Microsystem and Information Technology (SIMIT)
Shanghai, China

for contributions and leadership in wireless access and networking

Anthony Yen
ASML
San Jose, CA, USA

for leadership in extreme-ultraviolet lithography for high volume manufacture of integrated circuits

Dong Yu
Bothell, WA, USA

for contributions to context-dependent automatic speech recognition

Richard Yu
Carleton University
Ottawa, ON, Canada

for contributions to mobility management and radio resource allocation in mobile wireless networks

Habib Zaidi
Geneva University Hospital
Geneva, Switzerland

for contributions to quantitative multimodality molecular imaging

Changshui Zhang
Tshinghua University
Beijing, China

for contributions to semi-supervised learning for signal processing

Lei Zhang
Hong Kong Polytechnic University
Hong Kong, China

for contributions to sparsity-based image modeling and perceptual image quality assessment

2018 Newly Elevated Fellows

Yanyong Zhang
Rutgers, The State University of New Jersey
New Brunswick, NJ, USA

for contributions to robust and efficient large-scale sensor networks

Zhensheng Zhang
Livermore, CA, USA

for contributions to wireless ad-hoc and optical networks

Zhengming Zhao
Tsinghua University
Beijing, China

for contributions to electromagnetic transient analysis and control of high-voltage high-power electronics conversion

Tong Zhou
Tsinghua University
Beijing, China

for contributions to robust identification and estimation of control systems

Xiaofang Zhou
University Of Queensland
Queensland, Australia

for advancements in database query processing

Peiying Zhu
Huawei Technologies Canada
Ottawa, ON, Canada

for leadership in wireless communications systems

Thomas Zwick
Karlsruhe Institute of Technology
Karlsruhe, Germany

for contributions to millimeter wave transceivers