IEEE COMPUTER SOCIETY

AWARDS PRESENTATIONS

CORAL GABLES, FL // 5 JUNE 2019

IEEE

CONTENTS

IEEE COMPUTER SOCIETY AWARDS

Our awards program honors technical achievements, education, innovation, and service to the computer profession and to the Computer Society. Help ensure that the program maintains the highest quality by nominating individuals you consider to be eligible to receive international recognition through an appropriate IEEE Computer Society award.

www.computer.org/awards

AWARDS
PRESENTATIONS

LETTER FROM THE PRESIDENT

Cecilia Metra
2019 IEEE Computer Society President

Each year, the Computer Society presents its major achievement awards to the brightest luminaries and scientists in the field of computer science and computer engineering. Awardees are nominated by their peers for their outstanding discoveries and contributions. I am honored to present the 2019 awardees, each of whom has had a profound impact on the field and has contributed to the progress of humanity through computing. We will have a memorable evening together and will celebrate their discoveries and achievements. This celebration will not only be a great honor for all of us gathered together, but will also inspire our younger members worldwide, who will become the awardees that we will celebrate in the future. The world needs bright and illustrious minds, and the Computer Society will continue celebrating them in the years to come.

I would like to express my gratitude to the Awards Committee and its chair, Paolo Montuschi, for all of their work in evaluating the nominations, and to the Computer Society staff for organizing this memorable evening.

Please nominate the brightest minds in computing for the 2020 awards at www.computer.org/awards and enjoy our 2019 celebration!

OTHER IEEE COMPUTER SOCIETY AWARDS

2018 Seymour Cray Computer Engineering Award

DR. DAVID E. SHAW

"For the design of special-purpose supercomputers for biomolecular simulations."

PRESENTED AT SC18, NOV. 2018

2018 Sidney Fernbach Award

DR. LINDA PETZOLD

"For pioneering contributions to numerical methods and software for differential-algebraic systems and for discrete stochastic simulation."

PRESENTED AT SC18, NOV. 2018

2018 Ken Kennedy Award

DR. SARITA ADVE

"For research contributions and leadership in the development of memory consistency models for C++ and Java, for service to numerous computer science organizations, and for exceptional mentoring."

PRESENTED AT SC18, NOV. 2018

2018 B. Ramakrishna Rau Award

DR. RAVI NAIR

"For contributions to branch prediction in processors, microarchitecture techniques in heterogeneous processing, microarchitecture support for virtual machines, and near-memory processing."

PRESENTED AT MICRO-51, OCT. 2018

2018 Eckert-Mauchly Award

DR. SUSAN EGGERS

"For outstanding contributions to simultaneous multithreaded processor architectures and multiprocessor sharing and coherency."

PRESENTED AT ISCA 2018, JUNE 2018

2019 Harlan D. Mills Award

DR. MARK HARMAN

“For fundamental contributions throughout software engineering, including seminal contributions in establishing search-based software engineering, reigniting research in slicing and testing, and founding genetic improvement.”

PRESENTED AT ICSE 2019, MAY 2019

2019 Charles Babbage Award

DR. IAN T. FOSTER

“For outstanding contributions in the areas of parallel computing languages, algorithms, and technologies for scalable distributed applications."

PRESENTED AT IPDPS 2019, MAY 2019

2019 Edward J. McCluskey Technical Achievement Award

DR. C.-C. JAY KUO

"For outstanding contributions to multimedia computing technologies and their applications."

PRESENTED AT COMPSAC 2019, JULY 2019

2019 Edward J. McCluskey Technical Achievement Award

DR. RADU MARCULESCU

"For seminal contributions to the science of network on chip design, analysis, and optimization."

PRESENTED AT COMPSAC 2019, JULY 2019

2019 Edward J. McCluskey Technical Achievement Award

DR. ZHI-HUA ZHOU

"For contributions to machine learning and data mining."

PRESENTED AT COMPSAC 2019, JULY 2019

2019 Richard E. Merwin Distinguished Service Award

MR. JOHN W. WALZ

"For service to the Computer Society with dedication and strong leadership aligned with a visionary strategic plan."

PRESENTED AT COMPSAC 2019, JULY 2019

CCF/IEEE CS YOUNG COMPUTER SCIENTIST AWARD

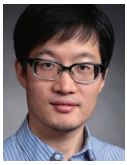
The China Computer Federation (CCF) and IEEE Computer Society (IEEE CS) Young Computer Scientist Award was developed for young scholars under 40 years of age who have achieved significant results and contributions in scientific research.

DR. DONGRUI FAN

"For contributions to data-oriented coprocessor technology and its industrialization."

DR. PENG CUI

"For contributions to network representation learning and social-sensed multimedia computing."



DR. XUANZHE LIU

"For contributions to service-based software eng. and systems."

IPSJ/IEEE CS YOUNG COMPUTER RESEARCHER AWARD

The IPSJ/IEEE CS Young Computer Researcher Award honors young researchers in computer science for their outstanding achievements and high expectations of their continuing progress.

DR. TAKUYA MAEKAWA

"For outstanding research on zero-shot and unobtrusive context recognition for pervasive computing."

DR. ATSUSHI SHIMADA

"For outstanding research on real-time learning analysis."

IEEE FELLOWS

CLASS OF 2019

We congratulate the 49 IEEE Computer Society members and 15 IEEE members who were elevated to IEEE Fellow by the CS Fellows Evaluation Committee. The Board of Directors confers the title of Fellow upon a person of outstanding and extraordinary qualifications and experience in IEEE-designated fields.

Edward Adelson, Massachusetts Institute of Technology

Michael Backes, Saarland University

Meng-Fan Chang, National Tsing Hua University

Deming Chen, University of Illinois–Urbana Champaign

Jong-Deok Choi, Seoul National University

Paul Chow, University of Toronto

Peter Clout, Vista Control Systems, Inc.

Michael Condry, Intel Corporation

Kerstin Dautenhahn, University of Waterloo

Xiaotie Deng, Peking University

Meng Hwa Er, Nanyang Technological University

Joseph Evans, University of Kansas

Robert Fish, Netovations LLC

Dimitrios Fotiadis, University of Ioannina

Mark Fox, University of Toronto

Anne Gattiker, IBM, Inc.

Simson Garfinkel, US Census Bureau

Anne Gattiker, IBM, Inc.

Mor Harchol-Balter, Carnegie Mellon University

Ahmed Hassan, Queens University

Xiaodong He, Redmond Microsoft

Ahmed Helmy, Redmond Microsoft

Gang Hua, Stevens Institute of Technology

Hans-Arno Jacobsen, University of Toronto

Lee Jaejin, Seoul National University

Hai Jin, Huazhong University of Science & Technology

Irwin King, The Chinese University of Hong Kong

Farinaz Koushanfar, University of California, San Diego

Hai Li, Duke University

Shaoying Liu, Hosei University

Cristina Lopes, University of California, Irvine

Tim Menzies, North Carolina State University

Onur Mutlu, Swiss Federal Institute of Technology—ETH Zurich

Jason Nieh, Columbia University

Danilo Pau, STMicroelectronics

Srinivasan Ramani, International Institute of Information Technology Bangalore

Mary Ellen Randall, Ascot Technologies Inc.

Amit Roy-chowdhury, University of California, Riverside

Dan Rubenstein, Columbia University

Stuart Rubin, Space and Naval Warfare Systems Center

Rajiv Sabherwal, University of Arkansas

Kyuseok Shim, Seoul National University

Mei-ling Shyu, University of Miami

Ramesh Sitaraman, University of Massachusetts

Dawn Song, University of California, Berkeley

Chi-Keung Tang, Hong Kong University Science & Technology

Jian Tang, Syracuse University

Zhuowen Tu, University of California, San Diego

Paul Vanoorschot, Carleton University

Xiaofeng Wang, Indiana University

Liang Wang, National Lab of Pattern Recognition

Simon Warfield, Boston Children's Hospital

John Turner Whitted, NVIDIA Corporation

Zhaohui Wu, Zhejiang University

Eric Xing, Carnegie Mellon University

Ming-Hsuan Yang, University of California at Merced

Xiaokang Yang, Shanghai Jiao Tong University

Hiroto Yasuura, Kyushu University

Moustafa Youssef, Egypt-Japan University of Science & Technology

Yizhou Yu, University of Hong Kong

Daqing Zhang, Peking University

Mengjie Zhang, Victoria University of Wellington

Lin Zhong, Rice University

Jingren Zhou, Alibaba Group

Lidong Zhou, Microsoft Research, Inc.

Michael Zyda, University of Southern California

COMPUTER SCIENCE & ENGINEERING UNDERGRADUATE TEACHING AWARD

Robert R. Kessler

University of Utah

Robert R. Kessler is a professor in the School of Computing at the University of Utah and recently stepped down as Director of its Entertainment Arts and Engineering Program. His early work centered on the portable implementation of the Lisp programming language and then its distributed and parallel implementations. Kessler founded the Center for Software Science, a state of Utah Center of Excellence, which was a research group working on system software for sequential and parallel/distributed computers. Later, Kessler served as chairman of the Department of Computer Science, which became the School of Computing in 2000. Around the same time, his research interests expanded into software engineering, and he also dabbled in agent technologies. In 2007 he founded the Entertainment Arts and Engineering (EAE) program as an undergraduate games emphasis, and it became an official program with its own master's degree in 2010. In 2017, EAE added a BS in Games degree. The program consistently ranks in the top five video game design programs in the world and achieved top ranking three times. Kessler has authored two books and over 75 papers, and has received over $16 million in external funding. He founded two startup companies and has been on several corporate boards. Kessler received the College of Engineering Outstanding Teaching Award in 2000 and the University of Utah's highest teaching honor, the Distinguished Teaching Award, in 2001.

For outstanding contributions to interdisciplinary computing education through the creation of an innovative program in Entertainment Arts and Engineering and a fruitful undergraduate teaching activity.

ABOUT THE AWARD

The award is presented for outstanding contributions to undergraduate education through teaching and service, and for helping to maintain interest in the field. The award was created to emphasize the importance with which the IEEE Computer Society views undergraduate education.

The Computer Society supports several activities at the undergraduate level. The IEEE CS has partnered with ACM to develop computing curriculum in computer science, computer engineering, software engineering, and information technology. As a member of the Computer Science Accreditation Board (CSAB), the IEEE CS monitors and evaluates curriculum accreditation guidelines in the field of computing and recommends changes as needed. The IEEE CS also sponsors competitions and scholarships for undergraduate students.

AWARDS COMMITTEE

Ernesto Ocampo Edye, Universidad Católica del Uruguay (Chair)

Elizabeth L. Burd, University of Newcastle*

Jack Davidson, University of Virginia

Travis Doom, Wright State University*

Dimitris Gizopoulos, University of Athens

Sven Koenig, University of Southern California*

Edmundo Tovar, Universidad Politécnica de Madrid

*Past recipient

TAYLOR L. BOOTH EDUCATION AWARD

Susan H. Rodger
Duke University

Susan H. Rodger is a Professor of the Practice in the Department of Computer Science at Duke University. She created the JFLAP educational software package for visualizing and experimenting with formal language concepts including automata, Turing machines, grammars, parsing, and proofs. JFLAP is used worldwide in courses on formal languages, discrete mathematics, compiler design, and artificial intelligence. Rodger also created the Adventures in Alice Programming Project, which integrates computing into K–12 education. She has taught over 400 teachers the Alice programming language and how to integrate computing into their disciplines.

Rodger has organized workshops on JFLAP, integrated Peer-Led Team Learning into computer science, and mentored students, faculty, and researchers. She is also known for making computer-science-themed cookies and integrating them into problem-solving activities that aid students in learning concepts.

Rodger is a long-time SIGCSE contributor and has chaired the SIGCSE Board. She led the effort to create a new SIGCSE conference called ACM Global Computing Education Conference (CompEd), with its first conference in May 2019. She is currently on the CRA-W Board, chaired the AP Computer Science Development Committee, and served on the ACM Education Policy Committee. She was awarded the ACM Karl V. Karlstrom Outstanding Educator Award and the ACM Distinguished Educator award, and was a finalist for the NEEDS Premier Award for Excellence in Engineering Education Courseware for JFLAP.

For leadership in undergraduate and K–12 computer-science education, and for broadening participation of women in computing.

ABOUT THE AWARD

A bronze medal and $5,000 honorarium are awarded for an outstanding record in computer science and engineering education. The individual must meet two or more of the following criteria in the computer science and engineering field:

Achieving recognition as a teacher of renown; writing an influential text; leading, inspiring, or providing significant education content during the creation of a curriculum in the field; and inspiring others to a career in computer science and engineering education.

ABOUT TAYLOR L. BOOTH

Taylor L. Booth was a professor of computer science and engineering at the University of Connecticut and director of its Computer Applications and Research Center. An IEEE Fellow and former editor in chief of *IEEE Transactions on Computers*, Booth was instrumental in defining computer science and engineering curricula for program accreditation through the Computer Society's and IEEE's respective boards. He served as a member of the Computer Society's Board of Governors, chaired its Constitution and Bylaws Committee, and held positions as first vice president, secretary, and vice president for educational activities.

Booth received the Frederick Emmons Terman Award in 1972 and the IEEE Centennial Medal in 1984. His name was on the ballot as a candidate for president-elect of the IEEE Computer Society when he died of a heart attack in 1986.

AWARDS COMMITTEE

Mark Allen Weiss, Florida International University (Chair)*

Judith Gal-Ezer, The Open University of Israel*

Charles E. Leiserson, Massachusetts Institute of Technology*

Diane T. Rover, Iowa State University

Russ Meier, Milwaukee School of Engineering

*Past recipient

HARRY H. GOODE MEMORIAL AWARD

Marilyn C. Wolf

Georgia Institute
of Technology

Marilyn C. Wolf is the Farmer Distinguished Chair in Embedded Computing Systems and GRA Eminent Scholar at the Georgia Institute of Technology. She received her BS, MS, and a PhD in electrical engineering from Stanford University in 1980, 1981, and 1984, where she was elected to Phi Beta Kappa and Tau Beta Pi.

Prof. Wolf was with AT&T Bell Laboratories from 1984 to 1989. She joined the faculty of Princeton University in 1989. While at Princeton, she directed the New Jersey Center for Multimedia Research and co-founded Verificon Corporation to commercialize smart camera technology. She joined Georgia Tech in 2007.

Prof. Wolf's research interests include Internet-of-Things systems and edge intelligence, cyber-physical systems, embedded computing, embedded computer vision, and VLSI systems. She is the author of several texts, including *Computers as Components*, now in its fourth edition, and *High-Performance Embedded Computing*, now in its second edition.

She has received the ASEE Terman Award and IEEE Circuits and Systems Society Education Award. She is a Fellow of IEEE and ACM and is a Golden Core Member of the IEEE Computer Society.

For contributions to embedded, hardware-software codesign, and real-time computer vision systems.

ABOUT THE AWARD

A bronze medal and $2,000 honorarium are awarded by the Computer Society on the basis of achievements in the information processing field which are considered either a single contribution of theory, design, or technique of outstanding significance, or the accumulation of important contributions on theory or practice over an extended time period, the total of which represent an outstanding contribution.

ABOUT HARRY H. GOODE

One of the first scientists to fully comprehend the powers and abilities of computers, Harry H. Goode formulated many principles of systems engineering and developed techniques for the design, analysis, and evaluation of large-scale systems. He was instrumental in initiating early systems projects, including the Typhoon computer and Whirlwind computer at MIT. He participated in the study that led to the creation of the Bomarc missile and conceived and developed the Air Defense Integrated System Project.

Goode taught at the University of Michigan and co-authored *System Engineering*, which classified and regularized systems and their design processes. He led a group to create the American Federation of Information Processing Societies (AFIPS), but died in an automobile accident before it was formally chartered. In 1964, AFIPS established a memorial award in his name in recognition of his achievements.

AWARDS COMMITTEE

David Padua, University of Illinois at Urbana-Champaign (Chair)*

David Albonesi, Cornell University

Arvind, Massachusetts Institute of Technology*

Bill Mangione-Smith, Consultant

Mary Lou Soffa, The University of Virginia

*Past recipient

W. WALLACE MCDOWELL AWARD

Rajesh K. Gupta

University of California, San Diego

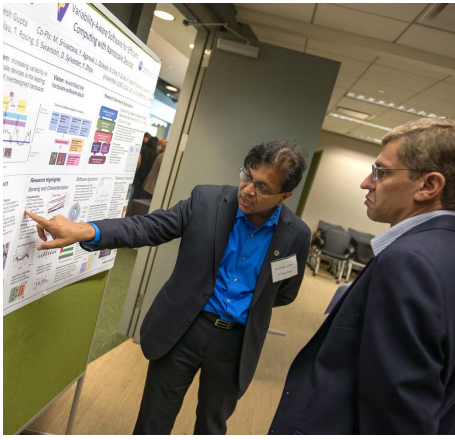
Rajesh K. Gupta is a professor of Computer Science and Engineering at UC San Diego, where he serves as founding director of the Halıcıoğlu Data Science Institute. Gupta's research is in embedded and cyber-physical systems with a focus on sensor data organization and its use in optimization and analytics. He has led several large-scale projects including NSF Expeditions on Variability and DARPA projects under Data Intensive Systems (DIS) and Circuit Realization at Faster Timescales (CRAFT) programs. He currently leads the NSF project MetroInsight and a co-PI on DARPA/SRC Center on Computing on Network Infrastructure (CONIX), with the goal of building a new generation of distributed cyber-physical systems that use city-scale sensing data for improved services and autonomy. His past contributions include SystemC modeling and SPARK parallelizing high-level synthesis, both of which have been incorporated into industrial practice.

Gupta has served as editor in chief (EIC) of *IEEE Design & Test of Computers* and founding EIC of *IEEE Embedded Systems Letters*. He currently serves as EIC of *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*. Gupta holds the Qualcomm Endowed Chair in Embedded Microsystems at UC San Diego and the INRIA International Chair at the French international research institute in Rennes, Bretagne Atlantique. He is a Fellow of IEEE, the ACM, and the American Association for the Advancement of Science (AAAS).

For seminal contributions in design and implementation of microelectronic systems-on-chip and cyberphysical systems.

ABOUT THE AWARD

A certificate and $2,000 honorarium are presented for outstanding recent theoretical, design, educational, practical, or other similar innovative contributions that fall within the scope of Computer Society interest.



ABOUT W. WALLACE MCDOWELL

During World War II, William Wallace McDowell's research and engineering group worked on 99 development projects for the US government. McDowell was responsible for the transition from electromechanical techniques to electronics, and the subsequent transition to solid state devices. He directed the development of the first commercial electronic calculator, which was followed by the IBM Selective Sequence Electronic Calculator. He was responsible for developing major advances including IBM's card-programmed calculator, magnetic drums and tape units, magnetic core and disc storage, the company's "700" systems, and the Naval Ordinance Research Calculator. He also established IBM's laboratories in San Jose, California and Zurich, Switzerland.

In 1962, IBM approached the Institute of Radio Engineers (IRE) to fund an award in his honor. In 1965, after the IRE merged with the American Institute of Electrical Engineers, the award was finalized.

AWARDS COMMITTEE

Pierangela Samarati, Università degli Studi di Milano (Chair)

Leila De Floriani, University of Maryland

Constance Heitmeyer, Naval Research Lab

Nei Kato, Tohoku University

Rafail Ostrovsky, University of California, Los Angeles

*Past recipient

HANS KARLSSON AWARD

Adrian Stephens

Management Consultant

Adrian Stephens is a management consultant specializing in standards development. A senior member of IEEE, he was the IEEE 802.11 chair and a member of the IEEE Standards Association Standards Board. Stephens was also a Senior Principal Engineer at Intel, where he developed IEEE 802.11 standards. He coordinated Intel's MAC proposal for IEEE 802.11n and chaired both the TGnSync and Joint Proposal teams. He has been chair of various IEEE 802.11 TGn committees and was technical editor of the IEEE 802.11n (High Throughput) amendment. He was managing chair of a group of companies that successfully proposed an initial draft for the IEEE 802.11ac amendment. He was also a technical editor for the 2012 and 2016 revisions of IEEE Std 802.11.

Before working for Intel, he was a Senior Director of Business Development at Mobilian Corporation, specializing in wireless LAN development and 802.11 standards work. Before that, he was at Symbionics Ltd, where he was head of software technology for wireless and multimedia design services and was responsible for developing a 802.11 MAC software licensed product. He was product architect for Bluetooth and Hiperlan/1 developments, and technical editor of the HomeRF SWAP-CA standard for two years, taking it to successful release.

For exemplary leadership of the 802.11 Wireless LAN Working Group and technical contributions to the 802.11 family of standards.

ABOUT THE AWARD

Established in 1992 in memory of Hans Karlsson, chairman and "father" of the IEEE 1301 family of standards. A plaque and $2,000 honorarium are presented in recognition of outstanding skills and dedication to diplomacy, team facilitation and joint achievement, in the development or promotion of standards in the computer industry where individual aspirations, corporate competition, and organizational rivalry could otherwise be counter to the benefit of society. Eligibility is limited to present or past participants in IEEE Computer Society standards activities.

ABOUT HANS KARLSSON

Hans Anders Rudolf Karlsson began his career working in the AGA mobile radio laboratory developing a telephone exchange and later an automatic mobile radio telephone system. While working for Ericsson and its subsidiary EPA in Melbourne, Australia, he developed the computer-controlled telex exchange APB-10 and the control system APN 162. Much of his work consisted of developing agreements leading to standardization of basic features. As a section head at Ericsson, he was responsible for internal and external relations, working with the development of standard computer systems and platforms. In 1984, he became a senior advisor at Ericsson, where he was responsible for international business contacts regarding connectors and the associated hardware.

Karlsson received numerous awards, including the Quality Prize for successful interactive work with companies within the US, and the IEEE Computer Society Outstanding Contribution Award for “outstanding leadership in the development of the IEEE 1301 Metric Mechanical Specification.”

AWARDS COMMITTEE

François Coallier, École de Technologie Supérieure (Chair)*

Charlene (Chuck) Walrad, Davenport Consulting

Katherine L. Morse, JHU/APL*

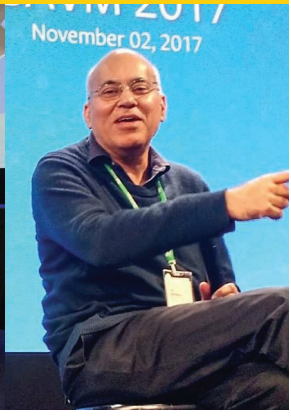
Debbie Brown, Eduworks Corporation

*Past recipient

COMPUTER PIONEER AWARD

Barbara Liskov
2018 AWARD

Laura Haas
2019 AWARD



Jitendra Malik
2019 AWARD

ABOUT THE AWARD

The Computer Pioneer Award was established in 1981 by the Board of Governors of the IEEE Computer Society to recognize and honor the vision of those people whose efforts resulted in the creation and continued vitality of the computer industry. The award is presented to outstanding individuals whose main contribution to the concepts and development of the computer field was made at least 15 years earlier. The recognition is engraved on a silver medal.

AWARDS COMMITTEE

Ming C. Lin, University of Maryland & University of North Carolina (Chair)

Baining Guo, Microsoft Research

Rama Chellappa, University of Maryland

Michael J. Flynn, Stanford University*

Shafrira Goldwasser, Massachusetts Institute of Technology

Michael Stonebraker, Massachusetts Institute of Technology

Eva Tardos, Cornell University

*Past recipient

For pioneering data abstraction, polymorphism, and support for fault tolerance and distributed computing in the programming languages CLU and Argus.

Barbara Liskov

Massachusetts Institute of Technology

Barbara Liskov is an Institute Professor at Massachusetts Institute of Technology. Her research interests include distributed and parallel systems, programming methodology, and programming languages. Liskov is a member of the National Academy of Engineering, the National Academy of Sciences, and the National Inventors Hall of Fame. She is a Fellow of the American Academy of Arts and Sciences and ACM, and a Charter Fellow of the National Academy of Inventors. She received the 2008 ACM Turing Award, the ACM SIGPLAN Programming Language Achievement Award in 2008, the IEEE Von Neumann medal in 2004, a lifetime achievement award from the Society of Women Engineers in 1996, and in 2003 was named one of the 50 most important women in science by *Discover* Magazine. She was inducted into the National Inventors Hall of Fame in 2012.

Laura Haas

University of Massachusetts Amherst

Laura Haas joined the University of Massachusetts Amherst in 2017 as Dean of the College of Information and Computer Sciences after a long career at IBM where she became an IBM Fellow. At the time of her retirement from IBM, she was Director of IBM Research's Accelerated Discovery Lab after serving in several different leadership positions. Previously, Haas was a research staff member and manager at Almaden. She is best known for her work on the Starburst query processor, from which DB2 LUW was developed; on Garlic, a system that allowed integration of heterogeneous data sources; and on Clio, the first semi-automatic tool for heterogeneous schema mapping. She received several IBM awards for outstanding innovation and technical achievement, an IBM Corporate Award for information integration technology, the Anita Borg Institute Technical Leadership Award, and the ACM SIGMOD Edgar F. Codd Innovation Award. Haas was Vice President of the VLDB Endowment Board of Trustees and served on the board of the Computing Research Association (she was vice chair from 2009–2015); she currently serves on the National Academies Computer Science and Telecommunications Board. She is an ACM Fellow, a member of the National Academy of Engineering, and a Fellow of the American Academy of Arts and Sciences.

> *"For pioneering innovations in the architecture of federated databases and in the integration of data from multiple heterogeneous sources."*

For a leading role in developing computer vision into a thriving discipline through pioneering research, leadership, and mentorship.

Jitendra Malik

University of California, Berkeley

Jitendra Malik is the Arthur J. Chick Professor in the Department of Electrical Engineering and Computer Science at the University of California at Berkeley, where he also holds appointments in vision science, cognitive science, and bioengineering. He received a PhD in computer science from Stanford University in 1985, after which he joined UC Berkeley as a faculty member. He served as Chair of the Computer Science Division during 2002-2006, and of the Department of EECS during 2004-2006.

Malik's group has worked on computer vision, computational modeling of biological vision, computer graphics, and machine learning. Several well-known concepts and algorithms arose in this work, such as anisotropic diffusion, normalized cuts, high dynamic range imaging, and shape contexts. He was awarded the Longuet-Higgins Award for "A Contribution that has Stood the Test of Time" twice, in 2007 and 2008, and he received the PAMI Distinguished Researcher Award in computer vision in 2013, the K.S. Fu prize in 2014, and the IEEE PAMI Helmholtz prize for two different papers in 2015.

Malik is a Fellow of IEEE, ACM, and the American Academy of Arts and Sciences, and a member of the National Academy of Sciences and the National Academy of Engineering.

RECOGNIZED COMPUTER PIONEERS

2018

LARRY PAGE & SERGEY BRIN
Creation of the Google search engine and leadership in creating ambitious products and research initiatives

BJARNE STROUSTRUP
Bringing object-oriented programming and generic programming to the mainstream with his design and implementation of the C++ programming language

2016

GRADY BOOCH
Pioneering work in object modeling that led to the creation of the Unified Modeling Language (UML)

2015

MICHAEL J. FLYNN
Computer arithmetic, microarchitecure, and multiprocessing

PETER M. KOGGE
Computer architecture

2014

LINUS TORVALDS
Linux kernel

2013

EDWARD FEIGENBAUM
Artificial intelligence

STEPHEN B. FURBER
ARM 32-bit RISC microprocessor

2012

CLEVE MOLER
Mathematical software and MATLAB

2011

DAVID J. KUCK
Parallel architectures and parallel compiler technology

2009

LYNN CONWAY
Superscaler architecture and simplified VLSI design methods

JEAN E. SAMMET
Programming languages

2008

BETTY JEAN JENNINGS BARTIK
Pioneering work on ENIAC, BINAC, and UNIVAC1

EDWARD J. MCCLUSKEY
Design and synthesis of digital systems

CARL A. PETRI
Petri net theory

2006

MAMORU HOSAKA
Pioneering activities within computing in Japan

ARNOLD M. SPIELBERG
Real-time data acquisition and recording

2004

FRANCES E. (FRAN) ALLEN
Compiler optimization

2003

MARTIN RICHARDS
System software portability through BCPL

2002

PER BRINCH HANSEN
Operating systems development and concurrent programming

ROBERT W. BEMER
ASCII

2001

WILLIAM H. BRIDGE
GE DATANET 30

VERNON L. SCHATZ
Electronic funds transfer

2000

HAROLD W. (BUD) LAWSON
"PL/I list processing"

GEORGY LOPATO
"Minsk"

GENNADY STOLYAROV
"Minsk"

1999

HERBERT FREEMAN
SPEEDAC

1998

IRVING JOHN (JACK) GOOD
Colossus—First stored program computer

1997

FRANCIS ELIZABETH (BETTY) SNYDER-HOLBERTON
Development of sort-merge generator for Univac

HOMER R. (BARNEY) OLDFIELD
Pioneering work in the development of banking applications/ERMA

1996

ANGEL ANGELOV
Computer science technologies in Bulgaria

RICHARD F. CLIPPINGER
Converting the ENIAC to a stored program computer

EDGAR FRANK CODD
Invented the first abstract model for database management

NORBERT FRISTACKY
Pioneering digital devices

VICTOR M. GLUSHKOV
Digital automation of computer architecture

JOSEF GRUSKA
Computer theory contributions

JIRI HOREJS
Informatics and computer science

LUBOMIR GEORGIEV ILIEV
First Bulgarian computer

ROBERT E. KAHN
Co-invention of TCP/IP protocols and origination of the internet program

LASZLO KALMAR
Logic machine & MIR computer

ANTONI KILINSKI
First commercial computers in Poland

LASZLO KOZMA
1930 Relay machines

SERGEY A. LEBEDEV
First computer in the Soviet Union

ALEXEJ A. LYUPONOV
Soviet cybernetics and programming

ROMUALD W. MARCZYNSKI
First digital computers in Poland

GRIGORE C. MOISIL
Polyvalent logic switching circuits

IVAN PLANDER
Computer hardware technology

ARNOLD REITSAKAS
Contributions to Estonia's computer age

ANTONIN SVOBODA
Computer research & design of SAPO/EPOS

1995

GERALD ESTRIN
Significant developments on early computers

DAVID C. EVANS
Seminal work on computer graphics

BUTLER W. LAMPSON
Early concepts and developments of the PC

MARVIN MINSKY
Conceptual development of AI

KENNETH H. OLSEN
Concepts and development of minicomputers

1994

GERRIT A. BLAAUW
IBM System/360 series of computers

HARLAN B. MILLS
Structured programming

DENNIS M. RITCHIE
Development of UNIX

KEN L. THOMPSON
Development of UNIX

1993

ERICH BLOCH
High speed computing

JACK S. KILBY
Co-inventor of the integrated circuit

WILLIS H. WARE
Design of IAS and Johnniac computers

1992

STEPHEN W. DUNWELL
Project Stretch

DOUGLAS C. ENGELBART
Human machine interaction

1991

BOB O. EVANS
Compatible computers

ROBERT W. FLOYD
Early compilers

THOMAS E. KURTZ
BASIC

1990

WERNER BUCHOLZ
Computer architecture

C.A.R. HOARE
Programming language definitions

1989

JOHN COCKE
Instruction pipelining and RISC concepts

JAMES A. WEIDENHAMMER
High-speed I/O mechanisms

RALPH L. PALMER
IBM 604 electronic calculator

Special Award for the Office of Naval Research:

MINA S. REES
MARSHALL C. YOVITS
E. JOACHIM WEYL
GORDON D. GOLDSTEIN

1988

FREIDRICH L. BAUER
Computer stacks

MARCIAN E. HOFF, JR.
Microprocessor on a chip

1987

ROBERT E. EVERETT
WHIRLWIND

REYNOLD B. JOHNSON
RAMAC

ARTHUR L. SAMUEL
Adaptive non-numeric processing

NICKLAUS E. WIRTH
PASCAL

1986

CUTHBERT C. HURD
Contributions to early computing

PETER NAUR
Computer language development

JAMES H. POMERENE
IAS and Harvest computers

ADRIANN VAN WIJGAARDEN
ALGOL 68

1985

JOHN G. KEMENY
BASIC

JOHN MCCARTHY
LISP and AI

ALAN PERLIS
Computer language translation

IVAN SUTHERLAND
Sketchpad

DAVID J. WHEELER
Assembly language

HEINZ ZEMANEK
MAILUEFTERL

1984

JOHN VINCENT ATANASOFF
First electronic computer with serial memory

JERRIER A. HADDAD
Lead IBM 701 design team

NICHOLAS C. METROPOLIS
First solved atomic energy problems on ENIAC

NATHANIEL ROCHESTER
Architecture of IBM 702 electronic data processing machines

WILLEM L. VAN DER POEL
Serial computer—ZEBRA 1982

ARTHUR BURKS
Early work in electronic computer logic design

HARRY D. HUSKEY
First parallel computer SWAC

1981

JEFFREY CHUAN CHU
Early work in electronic computer logic design

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