



Association for
Computing Machinery

Advancing Computing as a Science & Profession

Contact: Jim Ormond
212-626-0505
ormond@hq.acm.org

2020 ACM FELLOWS RECOGNIZED FOR WORK THAT UNDERPINS CONTEMPORARY COMPUTING

International Group Composed of Leaders Across All of Computing's Disciplines

New York, NY, January 13, 2021 – ACM, the Association for Computing Machinery, has named 95 members ACM Fellows for wide-ranging and fundamental contributions in areas including artificial intelligence, cloud computing, computer graphics, computational biology, data science, human-computer interaction, software engineering, theoretical computer science, and virtual reality, among other areas. The accomplishments of the 2020 ACM Fellows have driven innovations that ushered in significant improvements across many areas of technology, industry, and personal life.

The ACM Fellows program recognizes the top 1% of ACM Members for their outstanding accomplishments in computing and information technology and/or outstanding service to ACM and the larger computing community. Fellows are nominated by their peers, with nominations reviewed by a distinguished selection committee.

“This year our task in selecting the 2020 Fellows was a little more challenging, as we had a record number of nominations from around the world,” explained ACM President Gabriele Kotsis. “The 2020 ACM Fellows have demonstrated excellence across many disciplines of computing. These men and women have made pivotal contributions to technologies that are transforming whole industries, as well as our personal lives. We fully expect that these new ACM Fellows will continue in the vanguard in their respective fields.”

Underscoring ACM's global reach, the 2020 Fellows represent universities, corporations and research centers in Australia, Austria, Canada, China, Germany, Israel, Japan, The Netherlands, South Korea, Spain, Sweden, Switzerland, Taiwan, the United Kingdom, and the United States.

The contributions of the 2020 Fellows run the gamut of the computing field—including algorithms, networks, computer architecture, robotics, distributed systems, software development, wireless systems, and web science—to name a few.

Additional information about the 2020 ACM Fellows, as well as previously named ACM Fellows, is available through the [ACM Fellows site](#).

2020 ACM Fellows

Daniel J. Abadi

University of Maryland

For contributions to distributed databases, column-store databases, deterministic databases, graph databases, and stream databases

James Allan

University of Massachusetts Amherst

For contributions to information retrieval, including topic detection and tracking

Srinivas Aluru

Georgia Institute of Technology

For contributions to parallel methods in computational biology and leadership in data science

Andrea C. Arpaci-Dusseau

University of Wisconsin

For contributions to storage and computer systems

Remzi Arpaci-Dusseau

University of Wisconsin

For contributions to storage and computer systems

Suman Banerjee

University of Wisconsin-Madison

For contributions to design, implementation, and tools of wireless systems.

Manuel Blum

Carnegie Mellon University

For contributions to the foundations of computational complexity theory and its application to cryptography and program checking

Lionel Briand

University of Ottawa and University of Luxembourg

For contributions to automated software testing

David Brooks

Harvard University

For contributions to software and hardware design for power-efficient computer architectures

Ran Canetti

Boston University

For contributions to cryptography and computer security

John Canny

University of California, Berkeley

For contributions in robotics, machine perception, human-computer interaction, and ubiquitous computing

Anantha Chandrakasan

Massachusetts Institute of Technology

For energy-efficient design methodologies and circuits that enabled ultralow-power wireless sensors and computing devices

Yao-Wen Chang

National Taiwan University

For contributions to algorithmic electronic design automation

Moses Charikar

Stanford University

For design of efficient algorithmic techniques for big data, hashing, approximation algorithms, and metric embeddings

Yiran Chen

Duke University

For contributions to nonvolatile memory technologies

Graham R. Cormode

University of Warwick

For contributions to data summarization and privacy enabling data management and analysis

Patrick Cousot

New York University

For contributions to programming languages through the invention and development of abstract interpretation

Mathieu Desbrun

Inria/Ecole Polytechnique/California Institute of Technology
For contributions to geometry processing and discrete differential geometry

Whitfield Diffie

Findora Advanced Research Center

For the invention of asymmetric public-key cryptography and the promulgation of a practical cryptographic key-exchange method

Bonnie J. Dorr

Institute for Human and Machine Cognition

For human-centered and linguistically inspired approaches to natural language processing

Nicholas Duffield

Texas A&M University

For contributions to network measurement and analysis.

Alan Edelman

Massachusetts Institute of Technology

For contributions to algorithms and languages for numerical and scientific computing

Thomas Eiter

TU Wien

For contributions to knowledge representation and reasoning, logic programming, and declarative problem solving

Cormac Flanagan

University of California, Santa Cruz

For contributions to static and dynamic program debugging and verification methods

Jodi Forlizzi

Carnegie Mellon University

For contributions to design research in human-computer interaction

Dieter Fox

University of Washington

For contributions to probabilistic state estimation, RGB-D perception, and learning for robotics and computer vision

Sanjay Ghemawat

Google

For contributions to distributed systems design

Antonio Gonzalez

Universitat Politecnica de Catalunya

For contributions to the design of energy-efficient and resilient computer architectures.

Andrew D. Gordon

Microsoft Research and University of Edinburgh

For contributions to programming languages: their principles, logic, usability, and trustworthiness

Steven Gribble

Google

For contributions to virtualization technology across clusters, servers, and networks

Susanne E. Hambrusch

Purdue University

For research and leadership contributions to computer science education.

Martin Hellman

Stanford University

For the invention of asymmetric public-key cryptography and the promulgation of a practical cryptographic key-exchange method

Nicholas Higham

University of Manchester

For contributions to numerical linear algebra, numerical stability analysis, and communication of mathematics

C. Anthony (“Tony”) R. Hoare

University of Cambridge

For contributions to the theory of programming, and its application to the practice of engineering of software.

Holger H. Hoos

Universiteit Leiden

For contributions to automated algorithm selection and configuration for optimization and machine learning

Ihab F. Ilyas

University of Waterloo

For contributions to data cleaning and data integration

Lizy Kurian John

University of Texas at Austin

For contributions to the design, modeling and benchmarking of computer architectures

Joost-Pieter Katoen

RWTH Aachen University

For contributions to model checking of software and probabilistic systems

Nam Sung Kim

Samsung

For contributions to design and modeling of power-efficient computer architectures

Sven Koenig

University of Southern California

For contributions to artificial intelligence, including heuristic search and multi-agent coordination

David Kotz

Dartmouth College

For contributions to the security, privacy, and usability of mobile systems

Arvind Krishnamurthy

University of Washington

For contributions to networks and distributed computer systems

Ravi Kumar

Google Research

For contributions to web science modeling, analytics, and algorithms

Zhou Kun

Zhejiang University

For contributions to computer graphics

Brian Levine

University of Massachusetts Amherst

For contributions to network forensics, security, and privacy, and for thwarting crimes against children

Kevin Leyton-Brown

University of British Columbia

For contributions to artificial intelligence, including computational game theory, multi-agent systems, machine learning, and optimization

Xuelong Li

Northwestern Polytechnic University

For contributions to computing on and learning from higher-order data

Steven H. Low

California Institute of Technology

For theoretical foundations and real-world deployment of Internet congestion control and smart grid optimization

Chenyang Lu

Washington University in St. Louis

For contributions to adaptive real-time systems, real-time virtualization, and wireless cyber-physical systems

Samuel Madden

Massachusetts Institute of Technology

For contributions to adaptive real-time systems, real-time virtualization, and wireless cyber-physical systems

Scott Mahlke

University of Michigan

For contributions in compiler code generation for instruction level parallelism, and customized microprocessor architectures

David Maltz

Microsoft Azure

For contributions to networking infrastructure, including data center networking, network operating systems, and cloud networking

Volker Markl

TU Berlin

For contributions to query optimization, scalable data processing, and data programmability

Maja Mataric

University of Southern California

For contributions to socially assistive robotics and human-robot systems

Filippo Menczer

Indiana University

For research on the vulnerability of social media networks to disinformation and manipulation

Jose Meseguer

University of Illinois at Urbana-Champaign

For the development of logical methods for design and verification of computational systems

Meredith Ringel Morris

Microsoft Research

For contributions to human-computer interaction, information retrieval, computer-supported cooperative work, and accessibility

Nachiappan Nagappan

Microsoft Research

For contributions to empirical software engineering and data-driven software development

Radhika Nagpal

Harvard University

For contributions to collective intelligence, including self-organizing systems and swarm robotics

Moni Naor

Weizmann Institute of Science

For contributions to the foundations of cryptography and theoretical computer science

Chandrasekhar Narayanaswami

IBM T.J. Watson Research Center

For design and development of the Linux Watch and SoulPad, which influenced wearable and mobile systems

Sam H. Noh

Ulsan National Institute of Science and Technology

For contributions to storage system software, including flash and byte-addressable non-volatile memory

Prakash Panangaden

McGill University

For making continuous state systems amenable to logical and computational treatment

Sethuraman Panchanathan

National Science Foundation

For contributions to multimedia technologies and leadership in the scientific community

Manish Parashar

University of Utah

For contributions to high-performance parallel and distributed computing and computational science

Keshab K. Parhi

University of Minnesota

For contributions to architectures and design tools for signal processing and networking accelerators

Haesun Park

Georgia Institute of Technology

For contributions to numerical algorithms, data analytics, and leadership in computational science and engineering

Gordon Plotkin

University of Edinburgh

For contributions to the science of programming languages, particularly their operational and denotational semantics

Michael O. Rabin

Harvard University

For the introduction of nondeterministic automata, probabilistic automata, and for contributions to computability and computational complexity theory

Kui Ren

Zhejiang University

For contributions to wireless system security and cloud data security

Paul Resnick

University of Michigan

For contributions to recommender systems, economics and computation, and online communities

Mary Beth Rosson

Pennsylvania State University

For contributions to human-computer interaction, including scenario-based design

Steven Salzberg

Johns Hopkins University

For contributions to computational biology, including software for DNA sequence analysis, alignment, and genome assembly

Sanjit Arunkumar Seshia

University of California, Berkeley

For contributions to formal verification, inductive synthesis, and cyber-physical systems

Adi Shamir

Weizmann Institute of Science

For contributions to the field of cryptography

Heng Tao Shen

University of Electronic Science and Technology of China

For contributions to large-scale multimedia content understanding, indexing and retrieval.

Amit Sheth

University of South Carolina

For contributions to data semantics and knowledge-enhanced computing

Adam Smith

Boston University

For contributions to data privacy and cryptography

Olga Sorkine-Hornung

ETH Zurich

For contributions to digital geometry processing, computer animation, computer graphics and visual computing

Rick L. Stevens

Argonne National Laboratory

For contributions in high-performance computing systems, collaborative environments, and tools for large-scale science initiatives

Peter Stone

University of Texas at Austin

For contributions to automated planning, learning, and multiagent systems with applications in robotics and ecommerce

Yufei Tao

Chinese University of Hong Kong
For contributions to algorithms for large scale data processing

Leandros Tassioulas

Yale University
For contributions to network control and optimization with applications in communication networks

Kenneth Lane Thompson

Google
For contributions to the development of operating systems theory and for the implementation of the UNIX operating system

Andrew Tomkins

Google
For contributions to the understanding of the web and web-based social networks

Olga Troyanskaya

Princeton University and Simons Foundation
For contributions to computational biology, data integration

Matthew A. Turk

Toyota Technological Institute at Chicago and University of California, Santa Barbara
For contributions to face recognition, computer vision, and multimodal interaction

Wil Van Der Aalst

RWTH Aachen University
For contributions to process mining, process management and data science

Toby Walsh

University of New South Wales Sydney, CSIRO Data61
For contributions to artificial intelligence

Wei Wang

University of California, Los Angeles
For contributions to the foundation and practice of data mining

Laurie Ann Williams

North Carolina State University
For contributions to empirical research on agile software development, software security, and software engineering education

Cathy H. Wu

University of Delaware
For contributions to bioinformatics, computational biology, knowledge mining and semantic data integration

Shuicheng Yan

YITU Technology
For contributions to visual content understanding techniques and application

Wang Yi

Uppsala University
For contributions to the automated analysis and verification of real-time systems

Michael J. Zyda

University of Southern California
For contributions to game design, game and virtual reality networking, and body tracking

About ACM

[ACM, the Association for Computing Machinery](#) is the world's largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership,

promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

About the ACM Fellows Program

[The ACM Fellows Program](#) initiated in 1993, celebrates the exceptional contributions of the leading members in the computing field. These individuals have helped to enlighten researchers, developers, practitioners and end users of information technology throughout the world. The new ACM Fellows join a distinguished list of colleagues to whom ACM and its members look for guidance and leadership in computing and information technology.

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