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The Association for Computing Machinery
Advancing Computing as a Science & Profession

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ACM FELLOWS NAMED FOR COMPUTING INNOVATIONS THAT ARE ADVANCING TECHNOLOGIES IN THE INFORMATION AGE

2012 Fellows Hail from World's Leading Universities and Corporations

NEW YORK, December 11, 2012 -- ACM www.acm.org has recognized 52 of its members for their contributions to computing that are fundamentally advancing technology in healthcare, cybersecurity, science, communications, entertainment, business, and education. The 2012 ACM Fellows fellows.acm.org/homepage.cfm personify the highest achievements in computing research and development from the world's leading universities, corporations, and research labs, with innovations that are driving economic growth in the digital environment.

“These men and women are advancing the art and science of computing with enormous impacts for how we live and work,” said ACM President Vinton G. Cerf. “The impact of their contributions highlights the role of computing in creating advances that range from commonplace applications to extraordinary breakthroughs, and from the theoretical to the practical. Some recipients have also helped to broaden participation in computing, particularly among underrepresented groups, and to expand its impact across multiple disciplines.”

The complete list of 2012 ACM Fellows is appended to this announcement.

Within the corporate sector, the 2012 ACM Fellows named from **Hewlett-Packard** were cited for contributions to multithreaded programming and automatic memory management, and to matrix computations and parallel scientific computing. **IBM Research's** Fellow was recognized for advances in programming languages and open-source research infrastructures. **Goldman Sachs's** Fellow was cited for contributions to high performance computing software and compiler optimizations. **Microsoft Research's** ACM Fellow was honored for achievements in human-computer interaction focusing on computer-supported cooperative work. Other companies with 2012 ACM Fellows are **Amazon, NVIDIA, Mentor Graphics, and Cattell.Net**. Their respective contributions include analysis and management of large data sets; interconnection networks and supercomputers; geometric computing and integrated circuit design tools; and database systems.

Among the universities with 2012 ACM Fellows are the **University of California**, with representatives from **Irvine, San Diego, and Berkeley** campuses, and a joint position with **Lawrence Berkeley National Laboratory**. These Fellows were recognized for achievements in artificial intelligence for bioinformatics; design automation and manufacturability of microelectronic systems; applications of randomized algorithms to statistical physics; networking, distributed systems, and cloud computing; and improved programmer productivity. ACM Fellows at **Carnegie Mellon University** included those honored for contributions to reliability of storage systems, and artificial intelligence systems. **Cornell University's** ACM Fellows were honored for artificial intelligence applications to automated reasoning, and optimization in computer vision. **Harvard University's** ACM Fellow was cited for transformative contributions to the theory of computation.

Other North American universities with 2012 ACM Fellows include **University of Toronto; Colorado School of Mines; University of Maryland; University of Massachusetts, Amherst; Naval Postgraduate School; University of Calgary; University of Washington; University of Waterloo; and University of British Columbia.** ACM Fellows from these institutions were cited respectively for achievements in knowledge representation and computational decision making; wireless networking; image processing and computer vision; network protocols and internet routing; digital forensics and computer security education; ubiquitous computing; algorithms and their use in systems design study; computer communication networks and systems; and aspect-oriented programming language design and implementation.

In addition, 2012 ACM Fellows were named from **University of Illinois at Urbana-Champaign; Smith College; University of Pennsylvania; University of Texas, Austin; Polytechnic Institute of New York University; University of Michigan; Stanford University; Columbia University; Brown University; and Ohio State University.** Their achievements addressed quality-of-service management for distributed multimedia systems; computational geometry; theory and practice of programming languages; parallel programming and parallel compilation theory and practice; computer networks design and Internet applications; algorithms for hardware verification; the intersection of artificial intelligence, logic, and economics; combinatorial optimization and analysis of graph algorithms; graph drawing, algorithms and data structures; and distributed systems data and memory management.

Among universities outside North America, the 2012 ACM Fellows hailed from **ETH Zurich (Swiss Federal Institute of Technology), University of Edinburgh, École Polytechnique Fédérale de Lausanne (EPFL), and Tel Aviv University.** Fellows from these universities were recognized respectively for achievements in distributed systems, middleware, and data management; computer graphics and animation; Web data management; finite model theory and database theory; reliable distributed computing and hardware and software verification technology; and business process management and bioinformatics.

Other 2012 ACM Fellows were named from **Aarhus University** in Denmark, **Qatar Computing Research Institute, University of Tokyo, University of Cambridge, Karlsruhe Institute of Technology (KIT), and Montpellier Laboratory of Informatics, Robotics, and Microelectronics (LIRMM)** in France. Their contributions respectively are in the areas of massive data algorithmics; database management systems; high performance database systems; programming language semantics theory; software engineering and revision control systems; and parallel and distributed data management.

ACM will formally recognize the 2012 Fellows at its annual Awards Banquet on June 15, 2013, in San Francisco, CA. Additional information about the ACM 2012 Fellows, the awards event, as well as previous ACM Fellows and award winners is available at www.acm.org/awards.

2012 Fellows and Citations

Gustavo Alonso

ETH Zurich (Swiss Federal Institute of Technology)
For contributions to distributed systems, middleware, and data management

Lars Arge

Aarhus University
For contributions to massive data algorithmics

Pierre Baldi

University of California, Irvine
For contributions to artificial intelligence and statistical machine learning for bioinformatics

Hans-J. Boehm

Hewlett-Packard
For contributions to multithreaded programming and to algorithms and libraries for automatic memory management

Craig Boutilier

University of Toronto

For contributions to knowledge representation and computational decision making

Tracy K. Camp

Colorado School of Mines

For contributions in wireless networking and leadership in broadening participation in computing

Rick Cattell

Cattell.Net LLC

For contributions to database systems

Larry S. Davis

University of Maryland

For contributions to image processing and computer vision

Ahmed K. Elmagarmid

Qatar Computing Research Institute

For contributions to database management systems

Wenfei Fan

University of Edinburgh

For contributions to Web data management

Lixin Gao

University of Massachusetts, Amherst

For contributions to network protocols and internet routing

Simson Garfinkel

Naval Postgraduate School

For contributions to digital forensics and to computer security education

Garth A. Gibson

Carnegie Mellon University

For contributions to the performance and reliability of storage systems

Saul Greenberg

University of Calgary

For contributions to computer supported cooperative work and ubiquitous computing

Markus Gross

ETH Zurich (Swiss Federal Institute of Technology)/Disney Research, Zurich

For contributions to computer graphics and animation

David P. Grove

IBM Research

For contributions to programming languages and for the development of open-source research infrastructures

Jonathan Grudin

Microsoft Research

For contributions to human computer interaction with an emphasis on computer supported cooperative work

Rachid Guerraoui

École Polytechnique Fédérale de Lausanne (EPFL)

For contributions to the theory and practice of reliable distributed computing

Manish Gupta

Goldman Sachs

For contributions to high performance computing software and compiler optimizations

John Hershberger

Mentor Graphics Corporation

For contributions to geometric computing and to design tools for integrated circuits

Andrew B. Kahng

University of California, San Diego

For contributions to physical design automation and to design for manufacturability of microelectronic systems

Anna Karlin

University of Washington

For contributions to the design and analysis of algorithms and their use in the study of systems design

Srinivasan Keshav

University of Waterloo

For contributions to computer communication networks and systems

Gregor Kiczales

University of British Columbia

For contributions to aspect-oriented programming language design and implementation

Masaru Kitsuregawa

The University of Tokyo

For contributions to high performance database systems

Leonid Libkin

University of Edinburgh

For contributions to finite model theory and database theory

Tova Milo

Tel Aviv University

For contributions to database theory and business process management

Klara Nahrstedt

University of Illinois at Urbana-Champaign

For contributions to quality-of-service management for distributed multimedia systems

Joseph O'Rourke

Smith College

For contributions to computational geometry and for broadening participation in computing

Benjamin C. Pierce

University of Pennsylvania

For contributions to the theory and practice of programming languages and their type systems

Keshav K. Pingali

University of Texas, Austin

For contributions to data-centric parallel programming and to parallel compilation theory and practice

Andrew M. Pitts

University of Cambridge

For contributions to the theory of programming language semantics

Rajeev R. Rastogi

Amazon

For contributions to the analysis and management of large data sets

Raj Reddy

Carnegie Mellon University

For pioneering the design and construction of large scale artificial intelligence systems

Keith Ross

Polytechnic Institute of New York University

For contributions to the design and modeling of computer networks and Internet applications

Karem Sakallah

University of Michigan

For algorithms for Boolean satisfiability that advanced the state-of-the-art of hardware verification

Robert S. Schreiber

Hewlett-Packard

For contributions to matrix computations and to languages, compilers, and architectures for parallel scientific computing

Steven Scott

NVIDIA

For contributions to the architecture of interconnection networks and supercomputers

Bart Selman

Cornell University

For contributions to artificial intelligence with applications to automated reasoning and planning

Ron Shamir

Tel Aviv University

For contributions to bioinformatics

Yoav Shoham

Stanford University

For contributions at the intersection of artificial intelligence, logic, and economics

Joseph Sifakis

École Polytechnique Fédérale de Lausanne (EPFL)

For contributions to hardware and software verification technology

Alistair Sinclair

University of California, Berkeley

For contributions to randomized algorithms and their applications to statistical physics

Clifford Stein

Columbia University

For contributions to the theory of combinatorial optimization and to the design and analysis of graph algorithms

Ion Stoica

University of California, Berkeley

For contributions to networking, distributed systems, and cloud computing

Roberto Tamassia

Brown University

For contributions to graph drawing, algorithms and data structures and to computer science education

Walter F. Tichy

Karlsruhe Institute of Technology (KIT)

For contributions to software engineering and revision control systems

Patrick Valduriez

National Institute for Computer Science and Automatics (INRIA) and LIRMM

For contributions to parallel and distributed data management

Leslie Valiant

Harvard University

For transformative contributions to the theory of computation

Kathy Yelick

*University of California at Berkeley / Lawrence
Berkeley National Laboratory*

For contributions to parallel languages that improve
programmer productivity

Xiaodong Zhang

Ohio State University

For contributions to data and memory management in
distributed systems

Ramin Zabih

Cornell University

For contributions to discrete optimization in
computer vision

About ACM

ACM, the Association for Computing Machinery www.acm.org, 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 fellows.acm.org, 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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