



**Association for  
Computing Machinery**

*Advancing Computing as a Science & Profession*

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**ACM NAMES 44 FELLOWS FOR CONTRIBUTIONS TO COMPUTING AND INFORMATION  
TECHNOLOGY**

**Many Innovations Made in Areas Critical to Global Competitiveness**

**New York, NY**, January 15, 2009 -- ACM has recognized 44 of its members for their contributions to computing technology that have generated a broad range of innovations for industry, commerce, entertainment, and education. The 2008 ACM Fellows, from the world's leading universities, industries, and research labs, created advances in computer theory as well as practice. These technology developments have consistently demonstrated their crucial role in forming the foundation for sustained economic growth in an information-based society.

“These men and women are the inventors of technology that impact the way people live and work throughout the world,” said ACM President, Professor Dame Wendy Hall. “Their selection as 2008 ACM Fellows offers us an opportunity to recognize their dedicated leadership in this dynamic field, and to honor their contributions to solving complex problems, expanding the impact of technology, and advancing the quality of life for people everywhere.”

The complete list of 2008 ACM Fellows is appended at the end of this announcement.

Within the corporate sector, the 2008 ACM Fellows named from **Microsoft Research** were cited for contributions ranging from computer security and verification to human-computer interaction, computational photography and distributed computing. **IBM Almaden** and **Thomas J. Watson Research Centers** each had Fellows, who were recognized for query-processing language and computational geometry, which is often used in the development of computer graphics, computer-aided design, robotics, and other applications. Other corporate entities with 2008 Fellows were **Intel Corp.**, **Hewlett-Packard Laboratories**, and **Palo Alto Research Center**. Their respective contributions include compiler technology and computer performance enhancement tools, database management and computer communications protocols.

Among the universities with 2008 ACM Fellows was **Stanford University**, whose Fellows were recognized for achievements in programming language theory, rendering theory for use in computer graphics, software engineering process discipline, and reinventing virtual machines for more efficient operating system

functioning. Fellows from **Massachusetts Institute of Technology (MIT)** were honored for achievements in computer networking and distributed systems, theory of mathematical programming, development of the Macsyma system for symbolic mathematics, and algorithms and complexity theory. **Princeton University's** Fellows were acknowledged for advances in probabilistically checkable proofs and optimization problems, computer music as well as physics-based sound synthesis, and network control and management systems. **Carnegie Mellon University's** Fellows were recognized for contributions to computer-aided design tools, for combinatorial auctions and mechanism design, often used in game theory, and for software engineering process discipline. Fellows from the **University of Toronto** were cited for contributions to the theory of computational complexity, and for computer-aided design of semiconductor devices known as field-programmable gate arrays.

Other North American universities with 2008 ACM Fellows include **Georgia Institute of Technology**; the **University of Virginia**; the **University of Minnesota**; the **University of Texas at Austin**; the **University of Waterloo**; the **University of North Carolina at Chapel Hill**; **Rice University**; and the **University of California at Santa Cruz, Los Angeles, Berkeley, and Irvine**. ACM Fellows from these institutions were cited for achievements in ubiquitous computing research, emphasizing applications for education, home, and health; compiler design and implementation; human-computer interaction; compilers and memory management; algorithms and data structures; fault-tolerant distributed computing; technologies for parallel computing; computer security; computer communications protocols; electronic design automation; computer vision; and computer-supported cooperative work.

Outside of North America, the universities with 2008 ACM Fellows include **City University of Hong Kong** in China; **ETH (the Swiss Federal Institute of Technology) Zurich** in Switzerland; the **University of Cambridge** and **Newcastle University** in the UK; and **Chalmers University of Technology** in Sweden. Fellows from these universities were recognized for contributions to the interface of algorithmic methodology and game theory; software engineering and programming languages; theorem provers and verification techniques; dependable computing and computer history; and design of high performance memory systems.

ACM also named a 2008 Fellow from **Viewpoints Research Institute**, a nonprofit research organization, who has made fundamental contributions to personal computing and object-oriented programming.

ACM will formally recognize the 2008 Fellows at its annual Awards Banquet on June 27, 2009, in San Diego, CA. Additional information about the ACM 2008 Fellows, the awards event, as well as previous ACM Fellows and award winners is available at [www.acm.org/awards](http://www.acm.org/awards).

## 2008 ACM Fellows

### **Martín Abadi**

*Microsoft Research Silicon Valley /  
University of California, Santa Cruz*

For contributions to computer security and verification of computer systems

### **Gregory D. Abowd**

*Georgia Institute of Technology*

For contributions to ubiquitous computing research, with emphasis on applications for education, home and health

**Alexander S. Aiken**  
*Stanford University*

For contributions to programming language theory and systems

**Hari Balakrishnan**  
*Massachusetts Institute of Technology*

For contributions to computer networking and distributed systems

**Kenneth Clarkson**  
*IBM Almaden Research Center*

For contributions to computational geometry

**Stephen A. Cook**  
*University of Toronto*

For fundamental contributions to the theory of computational complexity

**Jack W. Davidson**  
*University of Virginia*

For contributions in compiler design and implementation

**Xiaotie Deng**  
*City University of Hong Kong*

For contributions to the interface of algorithmic methodology and game theory

**Sanjeev Arora**  
*Princeton University*

For foundational work on probabilistically checkable proofs and approximate solutions to NP-hard optimization problems

**William Buxton**  
*Microsoft Research*

For contributions to the field of human-computer interaction

**Jason (Jingsheng) Cong**  
*University of California at Los Angeles*

For contributions to electronic design automation

**Perry R. Cook**  
*Princeton University*

For contributions to computer music, physics-based sound synthesis and voice analysis/synthesis

**Umeshwar Dayal**  
*Hewlett-Packard Laboratories*

For contributions to managing federated, active, and heterogeneous databases

**Jose Joaquin Garcia-Luna-Aceves**  
*University of California, Santa Cruz / Palo Alto Research Center*

For contributions to the theory and design of computer communication protocols

**Michel X. Goemans**

*Massachusetts Institute of Technology*

For contributions to the theory of approximation algorithms and mathematical programming

**Charles H. House**

*Stanford University MediaX Program*

For distinguished service and contributions to ACM and the computing community

**Alan C. Kay**

*Viewpoints Research Institute*

For fundamental contributions to personal computing and object-oriented programming

**Roy Levin**

*Microsoft Research Silicon Valley*

For contributions to software and systems

**Jitendra Malik**

*University of California, Berkeley*

For contributions to computer vision

**Bertrand Meyer**

*ETH (Swiss Federal Institute of Technology)  
Zurich*

For contributions to software engineering and programming languages

**Joel Moses**

*Massachusetts Institute of Technology*

For developing the Macsyma computer system for formula manipulation

**Patrick Hanrahan**

*Stanford University*

For contributions to rendering theory and systems

**Watts S. Humphrey**

*Carnegie Mellon University*

For contributions to software engineering process discipline

**Joseph A. Konstan**

*University of Minnesota*

For contributions to human-computer interaction

**P. Geoffrey Lowney**

*Intel Corp.*

For contributions to compiler technology and performance enhancement tools

**Kathryn S. McKinley**

*University of Texas at Austin*

For contributions to compilers and memory management

**John C. Mitchell**

*Stanford University*

For contributions to the theory of programming language

**J. Ian Munro**

*University of Waterloo*

For contributions to algorithms and data structures

**Judith S. Olson**

*University of California at Irvine*

For contributions to human-computer interaction and computer-supported cooperative work

**Hamid Pirahesh**

*IBM Almaden Research Center*

For contributions to query processing and query languages

**Michael K. Reiter**

*University of North Carolina at Chapel Hill*

For contributions to computer security and fault-tolerant distributed computing

**Jonathan S. Rose**

*University of Toronto*

For contributions to the architecture and computer-aided design of field-programmable gate arrays

**Rob A. Rutenbar**

*Carnegie Mellon University*

For contributions to computer-aided design tools for mixed-signal integrated circuits

**Vivek Sarkar**

*Rice University*

For contributions to technologies for parallel computing

**Lawrence C. Paulson**

*University of Cambridge, Computer Laboratory*

For contributions to theorem provers and verification techniques

**Brian Randell**

*Newcastle University*

For contributions to dependable computing and computer history

**Jennifer Rexford**

*Princeton University*

For contributions to network control and management systems

**Mendel Rosenblum**

*Stanford University*

For contributions to reinventing virtual machines

**Tuomas Sandholm**

*Carnegie Mellon University*

For contributions to combinatorial auctions and mechanism design

**Mark S. Squillante**

*IBM Thomas J. Watson Research Center*

For contributions to the theory and practice of stochastic modeling

**Per Stenstrom**

*Chalmers University of Technology*

For contributions to the design of high-performance memory systems

**Richard Szeliski**

*Microsoft Research*

For contributions to computational photography

**Madhu Sudan**

*Massachusetts Institute of Technology*

For contributions to algorithms and complexity theory

**Douglas Terry**

*Microsoft Research Silicon Valley*

For contributions to distributed computing

**About ACM**

ACM, the Association for Computing Machinery <http://www.acm.org>, is an educational and scientific society uniting the world's computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the 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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