



The Computer Science Behind Your Science

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Today's Agenda

- **Bernard Chazelle**, Princeton University
Why Computer Science Theory Matters
- **Lydia E. Kavraki**, Rice University
From Robots to Biomolecules: Computing Meets the Physical World
- **J Strother Moore**, University of Texas, Austin
Mechanical Reasoning Tools and the Augmentation of Human Thought
- **Dan Reed**, University of North Carolina, Chapel Hill
Scientific Computing: An Intellectual Lever for Discovery
- **Peter Norvig**, Google
Extracting Semantics from the Web



Bernard Chazelle

is Professor of Computer Science at Princeton University, where he has been on the faculty since 1986.

He has held research and faculty positions at Carnegie-Mellon University, Brown University, Ecole Polytechnique, Ecole Normale Supérieure, University of Paris, INRIA, Xerox Parc, DEC SRC, and NEC Research, where he was a Fellow.

He received his Ph.D in computer science from Yale University in 1980.

Honors:

Fellow, American Academy of Arts and Sciences

Member, European Academy of Sciences

Fellow, World Innovation Foundation

ACM Fellow

Guggenheim Fellow (1994)



Lydia E. Kavraki

is the Noah Harding Professor of Computer Science at Rice University. She also holds joint appointments at the Department of Bioengineering at Rice and the Department of Structural and Computational Biology and Molecular Biophysics at Baylor College of Medicine.

Kavraki's research is in physical algorithms and their applications to robotics and bioinformatics. Kavraki received her Ph.D. in Computer Science from Stanford University.

She is the author and co-author of more than 80 technical papers and a book titled "Principles of Robot Motion" published by MIT Press in 2005.

Kavraki's awards include the Grace Murray Hopper Award from the Association for Computing Machinery (ACM).



J Moore

was educated at MIT and the University of Edinburgh.

He was a pioneer in the area of mechanized theorem proving and the use of mechanized mathematical methods to specify and verify computer hardware and software. Along with his colleague Bob Boyer, Moore invented a couple of well-known algorithms, including a string searching algorithm that is widely used in computer virus detection and biomedical data searching.

He is a fellow of the American Association for Artificial Intelligence and won the Herbrand Award in 1999 for his seminal work in theorem proving.

He holds the Inman Chair in Computing Theory at the University of Texas at Austin and he is currently also the chair of the Department of Computer Sciences.



Daniel A. Reed

is Director of the Renaissance Computing Institute (RENCI), an interdisciplinary center spanning the University of North Carolina at Chapel Hill, Duke University and North Carolina State University. He is also the Vice-Chancellor for Information Technology at the University of North Carolina at Chapel Hill, where he also holds the Chancellor's Eminent Professorship.

Professor Reed is also a former member of the President's Information Technology Advisory Committee (PITAC), where he chaired the subcommittee on information technology and computational science.

Through December 2003, Dr. Reed was Director of the National Center for Supercomputing Applications (NCSA) and one of the principal investigators and chief architect for the NSF TeraGrid.



Peter Norvig

has been at Google Inc since 2001 as the Director of Machine Learning, Search Quality, and Research. He is a Fellow of the American Association for Artificial Intelligence and co-author of Artificial Intelligence: A Modern Approach, the leading textbook in the field.

Previously he was the senior computer scientist at NASA and head of the 200-person Computational Sciences Division at Ames Research Center. Before that he was Chief Scientist at Jungle, Chief designer at Harlequin Inc, and Senior Scientist at Sun Microsystems Laboratories.

Dr. Norvig received a B.S. in Applied Mathematics from Brown University and a Ph.D. in Computer Science from the University of California at Berkeley. He has been a Professor at the University of Southern California and a Research Faculty Member at Berkeley.

He has over fifty publications in various areas of Computer Science, concentrating on Artificial Intelligence, Natural Language Processing and Software Engineering, including the books Paradigms of AI Programming: Case Studies in Common Lisp, Verbmobil: A Translation System for Face-to-Face Dialog, and Intelligent Help Systems for UNIX.