



**Association for
Computing Machinery**

Advancing Computing as a Science & Profession

Contact:

Virginia Gold

ACM

212-626-0505

vgold@acm.org

CACM REPORTS: THE CHANGING HUMAN RELATIONSHIP WITH COMPUTERS

March Issue Examines Impact of User Evolution from Desktop Systems to Mobile Interfaces

NEW YORK, NY, March 25, 2009 – Human interaction with computers has been radically transformed by the integration of computer systems beyond the workplace and into home life, education, and recreation. As a result, the design community finds itself confronting issues beyond functionality and usefulness, and must now consider how computing technology might provoke, engage, disturb, or delight. In its cover story, the March 2009 issue of *Communications of the ACM* ([CACM](#)) examines ways in which humans coexist and cope with computers. The issue also reports on smarter, more powerful scripting languages to improve game performance; how crowdsourcing applications are helping humans transcribe audio files, conduct market research, and label data for work or pleasure; and creating sophisticated prediction markets using advanced computational models. *CACM*, the flagship publication of ACM, offers readers access to this generation's most significant leaders and innovators in computing and information technology, and is available online in digital format.

Among the transformations that have redefined human relationships with technology are the encroachment of computers into personal space; the growing dependence on technology from shopping to travel, from work to medicine; and the influential role of communications technologies in connecting people across multiple boundaries. "Reflecting Human Values in the Digital Age" also cites the ever-growing "digital footprint" of personal information and behavior, and the proliferation of new digital tools such as Web 2.0 that drive creative engagement. Authors Abigail Sellen and Richard Harper of Microsoft Research Cambridge, Yvonne Rogers of The Open University, UK and Tom Rodden of the University of Nottingham, UK propose a new approach to human-computer interaction to tackle the questions that these transformations are raising.

In a Practice section article, Jim Larson, a software engineer at Google, examines Erlang, a programming language created at the Swedish telecom company Ericsson as a platform for developing software for managing phone switches. He concludes that, with the increasing importance of concurrent programming, involving systems in which several computations are executing simultaneously and potentially interacting with each other, Erlang can be a valuable tool.

In a Viewpoints article on the profession of IT, Peter Denning and Richard D. Riehl examine the

persistent question of whether software engineering is credible as an engineering discipline. Denning, director of the Naval Postgraduate School in Monterey, CA, and Riehl, a visiting professor at the institution, cite the critical issue: whether the engineering practices for software are able to deliver reliable, dependable, and affordable software. They urge an end to this controversy, encouraging system thinking that embraces hardware and user environment as well as software to understand the fundamental ideas that link all engineering disciplines.

A News essay on the evolution of virtualization traces its migration out of the data center and into applications in mobile computing, security, and software delivery. Technology writer Kirk Kroeker says recent developments have positioned virtualization as a core technology in cloud computing. He also says that one of the most interesting uses is on mobile devices, where virtualization enables the ability to isolate work and home smartphones on a single physical handset. Despite continuing challenges, proponents of the technology predict that all new machines might have virtualization capabilities embedded in their firmware.

Other March *CACM* articles:

- A Research Highlights article that sheds important light on the process of atrial fibrillation, an abnormal rhythm originating in the upper chambers of the heart and afflicting millions. A Technical Perspective accompanying the article concludes that the tools and procedures outlined will enable computer scientists to catalyze large-scale experiments or to warehouse massive amounts of experimental data, leading them to revolutionize the way we go about understanding a large tangle of information.
- A Viewpoints interview with C.A.R. Hoare, developer of the Quicksort algorithm and a lifelong contributor to the theory and design of programming languages, discusses the practical application of his theoretical ideas, edited by Len Shustek, chair of the Computer History Museum.
- A News item by technology writer Karen Frenkel on the 40th anniversary of Douglas Englebart's "Mother of All Demos." The event was the world debut of the computer mouse, as well as the introduction of interactive text, email, teleconferencing and videoconferencing, and hypertext. At a recent celebration, computer visionaries Andries van Dam and Alan Kay lamented the lack of curiosity and historical context among today's practitioners.

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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.

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