Computer Society Magazines: 2008 Preview

As the world’s preeminent organization of computing professionals, the IEEE Computer Society works to advance the theory, practice, and application of computer and information processing technology. The Computer Society publishes 14 technical magazines that cover topics including software development, security, microprocessors, test, and information technology. In 2008, Society publications will address breaking developments, emerging issues, broad trends, and historical perspectives in all aspects of the computing profession.

Computer, the flagship magazine of the IEEE Computer Society, publishes high-caliber, peer-reviewed content that is at the cutting edge of modern computing, and regularly features news articles, departments, monthly columns, and thought-provoking opinion pieces from computing professionals. Each January, Computer publishes an Outlook issue that highlights emerging technologies that promise to reshape the computing landscape. In 2008, key topics include virtualization, cybersecurity, and computational intelligence.

The spread of digital technology across the globe has accelerated in recent decades. The May 2008 issue of Computer will offer a perspective on all aspects of computing in developing countries. Computer’s June issue will look at emerging topics in service-oriented architectures, where services communicate by passing data to one another or by coordinating an activity between one or more services.

For current highlights, classic articles, and complete guidelines for prospective authors, visit www.computer.org/computer.

The IEEE’s first online-only publication, IEEE Distributed Systems Online, is a monthly magazine that features free peer-reviewed articles along with regular departments and a dynamic events calendar. It also offers content from two sponsoring magazines, IEEE.

Japan Team Wins CHC61 Web Design Competition

A team of undergraduates at Japan’s Doshisha University won the IEEE Computer Society Web Programming Competition (CHC61) with its Web site, “The Unknown History and Technology of MARS.” MARS, Japan Railways’ Magnetic-Electronic Automatic Reservation System, was a precursor of most modern ticketing, reservation, and travel applications.

CHC61 organizers encouraged groups of four students to work as teams to design, research, and implement high-quality Web sites that relate a facet of computer history. Featuring a theme of “Unsung Heroes,” the aim of the 2007 competition was to make students aware of computer history as well as stress the importance of transferable skills such as time management and dividing a major task among group members.

“The judges commented on the impressive visual design of Doshisha University’s site. They used a variety of Web-design techniques to produce a fun, interesting, and well-designed site,” said Alan Clements, chair of the competition and a professor at the UK’s University of Teesside.

Nearly 120 teams from 56 universities in 27 countries vied for the $10,000 first-place prize, provided by Microsoft.

The nine finalist teams included Anna University in Chennai, India; the Faculty of Informatics and Information Technology in Bratislava, Slovakia; Florida Gulf Coast University in Fort Myers; Guelph University in Ontario, Canada; the Institute of Engineering in Pulchowk, Nepal; and the Universidad de las Ciencias Informaticas in Havana, Cuba (three finalist teams).

To learn more about CHC61 and other Computer Society-sponsored student competitions, visit www.computer.org/portal/pages/ieeecs/education/chc60/index.html.
Pervasive Computing and IEEE Internet Computing, and other Computer Society publications.

DS Online (http://dsonline.computer.org) helps filter an often overwhelming deluge of information by having community editors who are leaders in their fields cover a variety of essential topics in distributed computing. The publication features expert-moderated topic areas that highlight projects, conferences, and other resources on subjects including grid computing, distributed agents, operating systems, mobile and pervasive computing, middleware, and Web systems.

IEEE Software magazine delivers reliable, useful, leading-edge software development information to keep engineers and managers abreast of rapid technology change. Software focuses on new technologies, programming styles, tricks of the trade, and ways to build and improve high-quality systems. Peer-reviewed articles and columns by real-world experts illuminate all aspects of the industry, including process improvement, project management, development tools, software maintenance, Web applications and opportunities, test, usability, and more.

Software’s January/February issue will feature industry perspectives on the challenge of creating secure software. Other 2008 issues will explore software quality requirements, quantitative methods, and software development infrastructure.

See www.computer.org/software for free articles, calls for papers, a sample issue, RSS feeds, and a complete editorial calendar.

IEEE Internet Computing magazine targets the technical and scientific Internet user communities as well as designers and developers of Internet-based applications and enabling technologies. IC features refereed articles that address key trends and recent developments in Internet applications, as well as journal-quality evaluations and reviews of both emerging and maturing Internet technologies.

Serving as a crossroads for software professionals and academic researchers, the magazine presents novel content from academia and industry on a wide range of topics, including security, applications, architectures, middleware, information management, policies, and standards. IC’s January/February 2008 issue will focus on crisis management. Other themes for the year include virtual organizations, useful computer security, distributed data mining, and Web services for geographic information systems.

See www.computer.org/internet for information on subscribing to or writing for the magazine. Key articles from Internet Computing are also available on the Computer Society’s Web site through IEEE Distributed Systems Online at http://dsonline.computer.org/portal/site/dsonline.

IEEE Security & Privacy magazine serves a broad cross-section of the professional community, presenting best practices and tracking late-breaking advances in information assurance and security.

The magazine will devote its January/February 2008 issue to recent research in identity management, while the May/June issue will examine applications and strategies for e-voting.

Sci&Tech’s regular departments include Crypto Corner, which explores issues, discoveries, and trends in digital cryptography and cryptanalysis, and Attack Trends, which examines emerging developments in system attacks, phishing, and malware.

See www.computer.org/security for Web extras that include podcasts, exclusive articles, and conference presentations.

The Computer Society’s IT Professional magazine is a bimonthly publication for developers and managers of enterprise information systems. Coverage areas include Internet security, emerging technologies, Web services, data management, software development, enterprise architectures and infrastructures, systems integration, and wireless networks.

In its January/February 2008 issue, IT Pro will focus on best practices in information technology. Throughout the year, the magazine will address topics that include service-oriented architectures, IT innovation and evolution, mesh networks, mashups, and data-stream management.

Visit the magazine’s Web site at www.computer.org/itpro for selected articles, complete author guidelines, and links to archived content.

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Visit the magazine’s Web site at www.computer.org/itpro for selected articles, complete author guidelines, and links to archived content.

Astronomy, medicine, physics, and other hard sciences require efficient algorithms, system software, and computer architectures that can address large-scale computational problems. Computing in Science & Engineering magazine covers topics that range from grid computing, computational physics, and educational techniques to scientific programming, computer simulations, and large-scale visualizations.

CiSE will devote its March/April 2008 issue to highlighting recent research in usable community grids. Later issues in 2008 will address topics that include combinatorics in computing, computational astrophysics, and high-performance computing education.


See the magazine’s Web site at www.computer.org/cise for selected articles, subscription information, and complete author guidelines.
In 2008, IEEE Micro magazine will publish original works that reach an international audience of microcomputer and microprocessor designers, system integrators, and users. Micro also highlights late-breaking topics in software, computers and peripherals; systems, components, and subassemblies; and communications, instrumentation, and control equipment.

A “Top Picks” issue, scheduled for January/February 2008, will feature Micro’s selections of the best papers from the major microarchitecture conferences of 2007. Best papers from the Hot Chips 19 conference are scheduled to run in Micro’s March/April issue.

Later, Micro will explore new developments in the interaction of computer architecture and operating systems in the many-core era.

See www.computer.org/micro for current highlights and more information on upcoming special issues.

IEEE Computer Graphics and Applications magazine bridges the theory and practice of computer graphics, addressing everything from specific algorithms to full system implementations. CG&A offers a unique combination of peer-reviewed feature articles and informal departments, including product announcements. Leading researchers guest-edit themed issues that track the latest developments and trends in computer graphics.

CG&A’s January/February 2008 special issue looks at advances in computer graphics, while its March/April issue features articles on the current and future state of computational aesthetics. Other issues will highlight procedural methods for urban modeling, mobile graphics, advanced visualization, and visual analytics.

For recent articles, links to archived content, detailed calls for papers, and a complete editorial calendar, visit www.computer.org/cga.

IEEE Intelligent Systems provides peer-reviewed, cutting-edge articles on the theory and applications of systems that perceive, reason, learn, and act intelligently. In 2008, Intelligent Systems will present a March/April issue on self-management through self-organization in information systems and a September/October issue on interactive entertainment. Other issues throughout 2008 will address topics that include the future of artificial intelligence, machine ethics, and intelligent agents in healthcare.

Intelligent Systems targets an audience of software engineers, systems designers, information managers, knowledge engineers, researchers, and professionals in such fields as finance, manufacturing, medicine, defense, and the sciences.

The IEEE Computer Society publishes Intelligent Systems in technical cosponsorship with the British Computer Society, the European Coordinating Committee for Artificial Intelligence, and the American Association for Artificial Intelligence. Members of these organizations are eligible for a discount on subscriptions to the magazine.

See www.computer.org/intelligent for selected articles, a calendar of AI-related conferences, RSS feeds, and a free downloadable trial issue.

Society Names 2007 Merwin Scholarship Winners

The IEEE Computer Society Richard E. Merwin Student Scholarship rewards leaders in Society student branch chapters who show promise in their academic and professional efforts. The Society recently announced four scholarship winners for 2007-2008.

Koustav Bhattachara of the University of South Florida; Amit Sohan Jain of Thadomal Shahani Engineering College in Mumbai, India; Farhad Mahmud Khan of Carleton University in Ottawa; and Jonathan Villanueva Tavira of the Centro Nacional de Investigación y Desarrollo Tecnológico in Morelos, Mexico, will each receive $4,000, paid in two installments.

Winners of the scholarship serve as IEEE Computer Society Student Ambassadors for their respective IEEE regions. Student Ambassadors collect and disseminate information to Computer Society student chapters in their region and serve as liaisons to the Chapters Activities Board.

The Society grants up to 10 Merwin scholarships each year. Active members of Computer Society student branch chapters who are juniors, seniors, or graduate students in electrical or computer engineering, computer science, or a computer-related field of engineering are eligible to apply. Applicants must be full-time students and have a minimum 2.5 GPA.

The Richard E. Merwin Award is named in honor of a Society past president. Other awards and scholarships that the Computer Society offers to students include the Lance Stafford Larson best-student-paper contest and the Upsilon Pi Epsilon/Computer Society Award for Academic Excellence, which is administered jointly by the IEEE Computer Society and the Upsilon Pi Epsilon international honor society.

Merwin Scholarship applications are due by 31 May 2008. For more information on IEEE Computer Society student scholarship and award opportunities, visit www.computer.org/students/schlrshp.htm.
Throughout 2008, IEEE MultiMedia magazine will publish articles about innovative multimedia and recent breakthroughs in the field. The quarterly publication serves a community of scholars, developers, practitioners, and students who are interested in using multiple media types to create new experiences. MultiMedia will conclude 2008 with an October-December issue covering late-breaking research on accessibility and assistive technologies in multimedia. Other issues throughout the year will highlight upward mobility and media streaming, collaborative tagging of multimedia, and emerging media.

In addition to technical articles, the quarterly magazine offers new book reviews, product descriptions, and announcements of conferences and workshops. MultiMedia also features a Readers’ Remarks department that encourages feedback and participation from the multimedia community.

See www.computer.org/multimedia for article submission guidelines and a complete editorial calendar.

IEEE Pervasive Computing serves the ever-expanding ranks of managers, engineers, application developers, and researchers who are involved in creating tomorrow’s mobile communication systems. Pervasive Computing presents expert perspectives on hardware technologies and software infrastructure for ubiquitous computing, sensing and interaction with the physical world, the graceful integration of human users, and systems considerations that include scalability, security, and privacy.

In 2008, Pervasive Computing will publish issues on implantable electronics, activity-based computing, hacking traditions, and pervasive user-generated content.

Visit www.computer.org/pervasive for submission guidelines and links to related content. Key material from Pervasive Computing is also available on the Web through IEEE Distributed Systems Online at http://dsuonline.computer.org.

IEEE Design & Test of Computers magazine focuses on current and near-future practice and includes real-world case studies, how-to articles, and tutorials. Its readers include users, developers, and researchers concerned with the design and test of chips, assemblies, and integrated systems.

Kicking off 2008, a January/February issue looks at design, integration, and test issues related to RFIC chips. The March/April issue of Design & Test will look at the current state of test compression, while the magazine’s May/June issue will highlight silicon debugging and diagnosis. A special section devoted to the International Test Conference will run in the magazine’s September/October edition. Other issues address design in the late- and post-silicon eras and the design and test of interconnects for multicore chips.

The IEEE Computer Society publishes Design & Test in technical cosponsorship with the IEEE Circuits and Systems Society.

See www.computer.org/dt to view calls for papers, selected highlights from past issues, or instructions on how to volunteer as a reviewer.

Featuring scholarly articles by leading computer scientists and historians, as well as firsthand accounts by computer pioneers, IEEE Annals of the History of Computing is the primary publication for recording, analyzing, and debating the history of computing. The quarterly magazine regularly calls upon computer pioneers to share their accounts of significant historical moments.

Highlights in 2008 include a look back at 30 years of Annals, as well as perspectives on the origins of e-mail, methods and challenges in the history of informatics, and the world of computing.

The entire collection of Annals, from 1979 to the present, is now available online in the IEEE Computer Society Digital Library archives. An extensive collection of Web-only exclusive content, including tutorials and anecdotes, is also available online.

See www.computer.org/annals for selected articles, biographies of prominent computing pioneers, and other resources.

IEEE Computer Society publications are available to members via print subscriptions and through the online Computer Society Digital Library, available at www.computer.org/publications/dlib. Computer Society members pay $121 for a full-year, all-access subscription. To subscribe, visit www.computer.org/subscribe.

Editor: Bob Ward, Computer, bnward@computer.org
Society Honors Wilkes and Parnas with 60th Anniversary Award

From a field of 13 candidates, the IEEE Computer Society has selected Maurice V. Wilkes, of the University of Cambridge, and David L. Parnas, of the Software Quality Research Laboratory at Ireland’s University of Limerick, to receive the one-time IEEE Computer Society 60th Anniversary Award.

60TH ANNIVERSARY AWARD
The award recognizes an individual or individuals who have been responsible for a fundamental and important computer science and engineering contribution over the past century. Selection committee members paid careful attention to the originality and significance of a contribution, as well as the weight of its impact on computer science and engineering, and society at large.

The combined award citation reads, “For their seminal contributions to the discipline of computing, Wilkes pioneered microprogramming, which enabled very large and complex hardware structures to be implemented reliably and systematically. Parnas provided insights into making large-scale systems development manageable with the concepts of encapsulation and information hiding, and helped establish software development as an engineering discipline firmly rooted in mathematics.”

Maurice V. Wilkes introduced program libraries and the principle of microprogramming in 1951.

MAURICE V. WILKES
Maurice V. Wilkes designed and built EDSAC (1949), the world’s first practical stored-program computer, and in 1951 developed the concept of microprogramming. His 1958 EDSAC 2 was the first computer to have a microprogrammed control unit and established the viability of microprogramming as a basis for computer design. Wilkes also developed Titan, which supported the UK’s first time-sharing system and provided wider access to computing resources for university researchers. A notable design feature of the Titan’s operating system was that it provided controlled access based on the identity of the program, as well as or instead of, the identity of the user.

Nigel Shadbolt, president of the British Computer Society said, “The BCS is thrilled and delighted that Sir Maurice Wilkes has received this very special award from the IEEE Computer Society. Maurice Wilkes is not only a pioneer in Computer Science; he was instrumental in setting up the BCS 50 years ago. His contributions have been immense and long-lasting.”

David L. Parnas developed precise specifications for programs and methods for model checking that have led to current practices in formal methods and safe systems.

DAVID L. PARNA
David L. Parnas played a key role in the development of the software engineering field. He is one of its founders and most influential authors, writing the first papers on both interface designs and program families (now known as product lines). Parnas’s research on information hiding is now widely accepted as the basis of object-oriented and other design methods, while his work on the precise specification of programs and model checking has led to current practices in formal methods and safe systems. He has also written some of the most widely cited papers on synchronization primitives, including some that have been seminal expositions of certain models (such as Petri nets).

Parnas is the 1998 winner of the ACM-Sigsoft Outstanding Research Award and two Most Influential Paper awards from the International Conference on Software Engineering. He also won an ACM Best Paper Award in 1979. In 1996, the Faculty of Applied Sciences at the Catholic University of Leuven, Belgium, presented Parnas with an honorary doctorate. He is a Fellow of both the ACM and the Royal Society of Canada.

IEEE COMPUTER SOCIETY AWARDS
The IEEE Computer Society sponsors an active awards program that recognizes both technical achievement and service to the Society and the profession. In the technical area, awards are presented for pioneering and significant contributions to the field of computer science and engineering. Service awards are presented to both volunteers and staff for well-defined and highly valued contributions to the Society. To learn more about IEEE Computer Society Awards, visit http://www.computer.org/awards.