



# From the Editor in Chief

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## Integrated Pervasive Computing Environments

*M. Satyanarayanan, Carnegie Mellon University and Intel Research Pittsburgh*

Welcome to the second issue of *IEEE Pervasive Computing*. The call for papers invited descriptions of efforts to create or use integrated pervasive computing environments. We welcomed both unifying overviews of projects and focused descriptions of specific aspects of those projects. The inaugural issue consisted entirely of invited papers, so this was our first call for external submissions. Despite short notice, we received 19 submissions—a clear indication of the level of interest in pervasive computing. Of these, we selected eight; another six will appear in future issues.

The eight articles are evenly balanced

between broad system descriptions and more focused discussions of supporting infrastructures for pervasive computing. Overall, the articles in the issue span a broad range of emerging technologies and expose many thought-provoking ideas. The first article is “From Informing to Remembering: Ubiquitous Systems in Interactive Museums,” by Margaret Fleck, Marcos Frid, Tim Kindberg, Eamonn O’Brien-Strain, Rakhi Rajani, and Mirjana Spasojevic. It describes Hewlett-Packard’s experience in deploying a ubiquitous system in an interactive science museum in San Francisco.

“Project Aura: Toward Distraction-

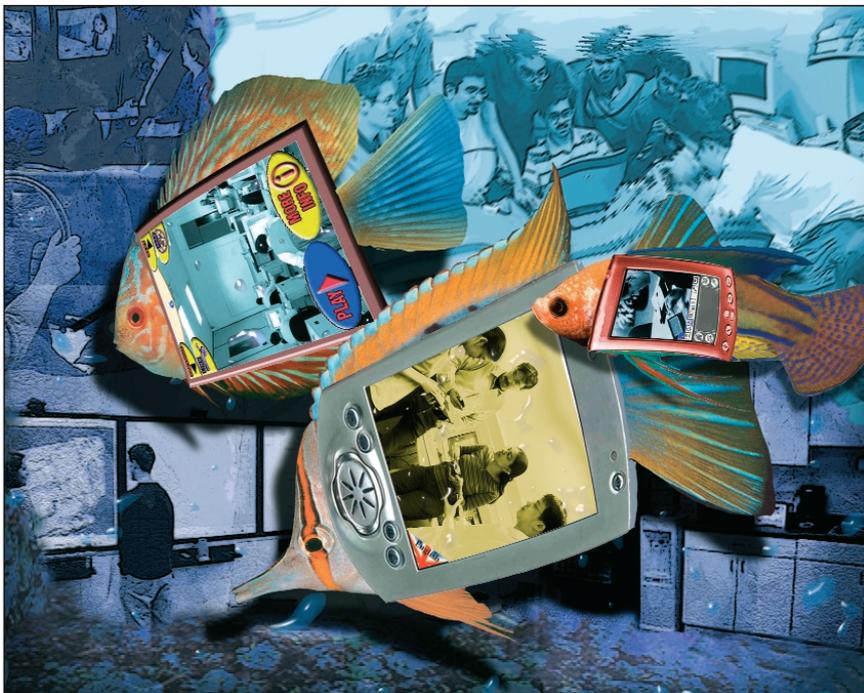
Free Pervasive Computing,” by David Garlan, Daniel P. Siewiorek, Asim Smailagic, and Peter Steenkiste, describes key aspects of the Aura project at Carnegie Mellon University. As the article explains, to attain its top-level goal of minimizing user distraction, Aura spans many system layers and encompasses many diverse technologies.

“User Testing a Hypermedia Tour Guide,” by Francesco Bellotti, Riccardo Berta, Alessandro De Gloria, and Massimiliano Margarone, focuses on using handheld computing technology in an aquarium in Genoa, Italy. This system requires visitors to rent handheld computers—a subtle measure of the work’s realism. The authors report on both the system design and its results from a human-computer-interaction perspective.

In “Making Voice Knowledge Pervasive,” Nikolaos Anerousis and Euthimios Panagos describe system-wide support for voice as a fundamental data type in pervasive computing. They also report on a case study of this technology in use in the financial services sector.

“A Support Infrastructure for the Smart Kindergarten,” by Alvin Chen, Richard R. Muntz, Spencer Yuen, Ivo Locher, Sun I. Park, and Mani B. Srivastava, describes sensor hardware for use in early childhood education. The hardware aims to capture interactions among students, teachers, and objects in a classroom setting.

In “Wireless Microservers,” Stephan Hartwig and Jan-Peter Strömann describe how WAP over Bluetooth wireless tech-



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nology can be used for remote control and home automation.

“The Interactive Workspaces Project: Experiences with Ubiquitous Computing Rooms,” by Brad Johanson, Armando Fox, and Terry Winograd, describes the authors’ experience with a smart room environment with large high-resolution displays at Stanford University.

Finally, in “Designing a Home of the Future,” Stephen S. Intille describes a philosophy and vision of how to use pervasive computing technology in home architecture.

In the regular departments, Scott Midkiff’s Education department describes a course on network-centric computing jointly taught at Rutgers University and the University of Maryland. In the Applications department, Vince Stanford discusses the guidelines that Kaiser Permanente, a large health-care organization, has developed for using pervasive com-

Owing to a production error, Guerney Hunt’s photo and bio were inadvertently omitted from the first issue. We apologize for the oversight. Hunt is a founding editorial board member of this magazine and has been an important contributor to many aspects of it. We look forward to his continued support and guidance.



**Guerney D.H. Hunt** is a research staff member at the IBM T.J. Watson Research Center. His research interests include scaling technologies, network systems, systems architecture, operating systems, fault tolerance, distributed systems, and ubiquitous computing. He received his BS in mathematics from Michigan Technological University and his MS and PhD in computer science from Cornell University. Contact him at [gdhh@us.ibm.com](mailto:gdhh@us.ibm.com).

puting technology. The intersection of technical issues with legal and regulatory issues makes this a particularly interesting discussion. Thad Starner’s Wearable Computing department provides a historical perspective on the concept of wearable assistants, dating the idea back to the visions of Vannevar Bush and J.C.R. Licklider. Finally, in the Standards, Tools, and Best Practices department,

Sumi Helal surveys a range of available toolkits for use with pervasive Java.

Looking ahead, our July–September joint issue with *IEEE Wireless Communications* will focus on context-aware computing, and the year’s final issue will focus on wearable computing technologies and applications. I look forward to presenting you with many interesting and timely articles on these topics. ■

# FOR

# PAPERS

## IEEE PERSVASIVE COMPUTING

### WEARABLE COMPUTING TECHNOLOGIES & APPLICATIONS

Submission Deadline: 1 July 2002  
Submission address: [pervasive@computer.org](mailto:pervasive@computer.org)  
Publication date: December 2002

*IEEE Pervasive Computing* magazine invites articles describing any aspect of wearable computing for its October–December issue. We are interested in hardware, software, and communication technologies, as well as in applications of wearable computers and reports of usage experience. We especially welcome articles that bridge multiple aspects of a system and report on the particular challenges of integration and deployment. Example topics include:

- Body-worn hardware
- Wearable computing fabrics
- Body-area networks and protocols
- OS and middleware support for wearable computing
- Augmented reality
- Energy-related topics relevant to wearable computing
- Ergonomic design and evaluation
- Wearable applications
- System-integration challenges and solutions
- Deployment case studies, including social aspects

Submissions should be 4,000 to 6,000 words and should follow the magazine’s guidelines on style and presentation (see <http://computer.org/pervasive/author.htm>). All submissions will be anonymously reviewed in accordance with normal practice for scientific publications.

In addition to full-length submissions, we also invite work-in-progress submissions of 250 words or less. The deadline for those submissions is 10 August 2002. Please contact Lead Editor Shani Murray ([smurray@computer.org](mailto:smurray@computer.org)) or Editor-in-Chief M. Satyanarayanan ([satya@cs.cmu.edu](mailto:satya@cs.cmu.edu)) for more information.

