



From the Editor in Chief

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Beyond the Start-up Phase

M. Satyanarayanan

This issue begins our third year of publication. As we transition from start-up to steady state, it is appropriate to pause and review what we have accomplished in our first two years. It is also a good time to remind ourselves of our mission and unique role and to set our sights for the future.

ACCOMPLISHMENTS

What we have collectively accomplished in two short years is well beyond what I ever imagined in mid 2001. We have a distinguished editorial board from academia and industry that's strongly committed to this publication's success. The associate editors in chief and department editors have been especially generous with their time and attention. Many brave authors have submitted their high-quality work, trusting that their articles would receive significant exposure and visibility. Most of all, we now have a sizable readership.

We have two years' worth of published material to exemplify the topics and genres of relevant material. Only the articles in the first issue were invited papers (and even those were rigorously reviewed); all other published articles have gone through the full peer-review process. So it is clear that we attract good content from authors. We now have a modest backlog, about one issue's worth of articles, accepted and awaiting publication. This is about right: a much larger backlog would result in frustrating delays for the authors; a much shorter one would

make it difficult to balance the load across issues.

Many *IEEE Pervasive Computing* articles are now on the reading lists of graduate-level courses in pervasive and mobile computing at many leading universities (a Web search for "IEEE Pervasive Computing" is the easiest way to find many of these courses). So the actual number of people who read and benefit from our material significantly exceeds raw subscription numbers.

**This publication strives
to bring together
communities that would
normally not publish in
the same venue or
interact with each other
significantly.**

Most important, some members of this "invisible audience" will be future authors whose contributions will sustain the publication's intellectual freshness and vitality over the long term.

MISSION AND UNIQUE ROLE

Interest in pervasive computing and closely related fields such as mobile computing has exploded in recent years, creating many related conferences and publications (see the related sidebar). Amid so many alternatives, does *IEEE Pervasive Computing* have anything unique to offer?

The answer is an emphatic "yes." In the inaugural issue, I characterized our mission as that of a catalyst for pervasive computing. A catalyst hastens events that would have otherwise occurred at a slow, possibly imperceptible, pace. Catalysts work by bringing highly unlikely combinations of components into close proximity of each other to initiate a reaction. Consistent with that metaphor, this publication strives to bring together communities that would normally not publish in the same venue or interact with each other significantly. It thus inspires new ideas that would have otherwise been slow to form.

Success in pervasive computing requires teamwork and collaboration by researchers and practitioners working from many different perspectives: hardware, software, human-computer interaction, sensing and actuation, and real-world applications. It is from cross-fertilization across these diverse perspectives that we will make true progress in pervasive computing. *IEEE Pervasive Computing*'s unique role is to enable this cross-fertilization.

The magazine—rather than transaction—format makes *IEEE Pervasive Computing* particularly well suited to its role, because we have much greater flexibility in the kinds of material we accept. A conference proceedings or transaction can only publish original research, whereas we can include materials such as retrospectives, surveys and tutorials, real-world case studies, product evaluations, and digests of confer-

ences and workshops. In addition, professionally edited and illustrated articles help improve readability and hence accessibility to nonexperts. Rather than encouraging fragmentation, this publication fosters integration across different communities.

PRESERVING AND ENHANCING QUALITY

It has been gratifying to see the high quality of published material, right from the start. High quality does not happen by accident: it is the net result of many factors, each essential to the outcome. Submissions must be strong to begin with, and all the accepted articles must carefully incorporate reviewer feedback. For each conditionally accepted publication, an associate editor serves as a shepherd to ensure that authors understand both the spirit and letter of reviewer comments and adequately address any concerns. Finally, the production staff edits all accepted material to ensure readability. The net result is that the quality of our material is at least equal to—and in some cases exceeds—that of the publishing forums listed in the “Conferences and Publications” sidebar.

High quality is not a luxury for this publication. To succeed in our mission, we must sustain a reputation for high quality. Only then will nonexperts view *IEEE Pervasive Computing* as an authoritative source of knowledge (I worry less about experts because they can recognize and discard low-quality material on their own). The best authors typically want their finest work to appear in forums with the highest reputations, so high quality becomes a self-sustaining attribute. Indeed, quality is likely to continuously improve over time, creating an upward spiral.

However, we must interpret the term “quality” with care. A superb survey would be a poor research contribution and vice versa. So, the attribute of quality implicitly includes the notion of fitness to task. Our goal is to publish only the best material of each genre—that is,

CONFERENCES AND PUBLICATIONS

Conferences related to pervasive computing include

- IEEE Workshop on Mobile Computing Systems and Applications (WMCSA, first held in 1994). <http://wmcsa2003.stanford.edu>
- ACM International Conference on Mobile Computing and Networking (MobiCom, first held in 1995). www.sigmobile.org/mobicom/2004
- IEEE International Symposium on Wearable Computers (first held in 1997). www.cc.gatech.edu/ccg/iswc04
- International Conference on Ubiquitous Computing (UbiComp, first held in 1999). <http://ubicomp.org/ubicomp2004>
- International Conference on Pervasive Computing (first held in 2002). www.pervasive2004.org
- IEEE International Conference Pervasive Computing and Communication (PerCom, first held in 2003). www.percom.org
- International Conference on Mobile Systems, Applications, and Services (MobiSys, first held in 2003). www.sigmobile.org/mobisys/2004
- MobiQuitous, the First Annual International Conference on Mobile and Ubiquitous Systems: Networking and Services (to be held this year). www.mobiqus.org

Related publications include *IEEE Transactions on Mobile Computing* and Springer-Verlag's *Journal of Personal and Ubiquitous Computing*.

In addition, some overlap exists between *IEEE Pervasive Computing* and well-established conferences and transactions in computer systems, networking, and human-computer interaction.

the best original research, best surveys, best case studies, and so on. Judgment of quality is the responsibility of the editors, with guidance from the peer-review process. So the assurance of quality ultimately rests on the high caliber and vigorous participation of the editorial board and reviewers. There is no easy alternative!

Because quality is subjective, it is tempting to equate it with the objective attribute of selectivity—that is, number of acceptances divided by number of submissions. The smaller this ratio, the higher the publication's inferred quality. Because this is a simple mechanical process, involving no critical thought or judgment, it can be applied en masse. Indeed, publication lists for academic promotion cases are often accompanied by statements of selectivity for each forum in which the candidate has published.

Unfortunately, selectivity is a poor surrogate metric for quality. Imagine a forum with such a high reputation for quality that authors don't send it anything but their best work. After all, it would be smart to avoid the reviewing delay and send the lower-quality work to a less demanding forum where the chances of acceptance and prompt publication are much higher. By this process of self-selection, the submission pool to the best forums tends to be of much higher quality than to other forums. It is not fanciful to imagine a situation where there are only a few superb submissions, all of which are accepted! This looks bad by the selectivity metric, but that metric hardly reflects the true outcome. Conversely, some forums receive numerous mediocre submissions because their authors have seen marginal work published there before.

Each rejected submission represents wasted effort on the part of reviewers and editors—effort that could have been better spent helping to improve accepted submissions.

Our focus here will always be on quality, not selectivity. We would love to be in a situation where we receive only strong submissions and accept them all! It is truly with regret that our editors reject submissions. Our preferred option is to offer constructive feedback that lets authors revise their submissions to the point where we can accept them. Over time, as *IEEE Pervasive Computing*'s reputation continues to rise, we hope that articles appearing here will set the standard for high-quality work in pervasive computing. ■

NEW EDITORIAL BOARD MEMBER



James Landay is an associate professor in the Computer Science and Engineering department at the University of Washington, specializing in human-computer interaction. He is also the laboratory director of Intel Research Seattle. His research interests include automated usability evaluation, demonstrational interfaces, ubiquitous computing, user interface design tools, and Web design. He received his BS in electrical engineering from UC Berkeley and his MS and PhD in computer science from Carnegie Mellon University. He's the coauthor of *The Design of Sites: Principles, Processes, and Patterns for Crafting a Customer-Centered Web Experience* (Addison-Wesley, 2003). He is also a founding member of the University of Washington Design & Usability Brainstorming Center. Contact him at the Univ. of Washington, Dept. of Computer Science & Eng., 642 Paul G. Allen Center, Box 352350, Seattle, WA 98195-2350; landay@cs.washington.edu; www.cs.washington.edu/homes/landay.



CALL FOR PAPERS BUILDING AND EVALUATING UBIQUITOUS SYSTEM SOFTWARE

Ubiquitous computing environments raise new challenges for system software researchers. These environments incorporate a wide variety of devices, many of which are highly constrained in power and other local resources. Coordinating the devices is an even greater challenge because ubicomp environments tend to be volatile. Consider, for example, measuring context parameters such as human presence from a variety of sensors subject to routine disconnection and failure or exploiting services from a mobile device that regularly enters and leaves a state of connectivity. The heterogeneity and volatility of ubiquitous environments demand novel approaches to designing, building, and evaluating system software.

Example topics include, but are not limited to

- Resilience to routine failures and disconnections
- Configuring and reconfiguring ubiquitous systems
- Supporting spontaneous (ad hoc) interactions
- Metrics and benchmarks
- Case studies of deployed systems

If you have any questions on topic requirements, please contact guest editor Tim Kindberg at timothy@hpl.hp.com.

GUEST EDITORS

Vinny Cahill, Trinity College Dublin

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SUBMISSION GUIDELINES

Submissions should be 4,000 to 6,000 words long and should follow the magazine's guidelines on style and presentation. See our author guidelines at www.computer.org/pervasive/author.htm for more information.

Submission deadline: 15 March 2004

Publication: July–September 2004

Submit manuscripts online at <http://cs-ieee.manuscriptcentral.com>.

WORKS IN PROGRESS

In addition to full-length submissions, we also invite work-in-progress submissions of 250 words or less. These will not be peer-reviewed, but will be edited by the staff into a feature for the issue. Submit yours by 1 May 2004 to pervasive@computer.org.

