

ARCS 2005
18th International Conference on Architecture of Computing Systems

Architecture of Computing Systems (ARCS)
System Aspects in Organic and Pervasive Computing

Innsbruck, Austria
March 14 –17, 2005

<http://www.teco.edu/arcs05>

CALL FOR PAPERS

Extended Paper Submission Deadline: October 3, 2004

Future computer systems will be much more integrated into the fabric of everyday life than today's computers are. They will become smaller, more appropriate for their use, integrated into everyday objects and often virtually or physically invisible to the users. They will be also deployed in a much higher quantity and penetrate many application areas.

To provide such features and functionality, computer devices become tinier yet still increase in complexity; they must consume less power, while still supporting advanced computation and communications, such that they are highly connected yet still operate as autonomous units. This brings several research topics to the fore, including ultra-low power consumption, self-awareness, adaptive networking, smart behavior of systems, scalability and complexity of devices and systems. Pervasive and ubiquitous computing research addresses such issues by developing concepts and technology for interweaving computers into our everyday life. The principle approach is to enhance system functionality and adaptability by recognizing context and situations in the environment. Organic computing then addresses high system complexity by drawing analogies from complex biological systems, with the human-centered goal of self-organization. Organic computing investigates the design and implementation of self-managing systems that are self-configuring, self-optimizing, self-healing, self-protecting, context aware, and anticipatory.

ARCS 2004 will emphasize the design, realization and analysis of the emerging computing systems for organic and pervasive computing and their scientific, engineering, and commercial applications. The conference focuses on system aspects of organic and pervasive computing in software and hardware. In particular, system integration and self-management of hardware, software and networks are in the centre of interest. In addition to technical sessions of contributed paper presentations, the conference will offer invited presentations, workshops, and tutorials. Papers should not exceed 15 pages (approximately 5000 words) in Springer LNCS style. We accept only electronic submissions in postscript or pdf format. The URL of the submission site is <http://www.teco.edu/arcs05/>. Workshops are intended to discuss themes related to the conference and should be open to all ARCS attendees. Workshop and Tutorial proposals should be submitted in GI Lecture notes style and should not exceed 2 pages. Papers pertaining to aspects of computer and systems architecture, in particular in the field of organic and pervasive computing are sought, including:

Enabling Technologies and Infrastructure

- operating systems
- middleware for organic, pervasive and peer-to-peer computing
- multi-agent and mobile agent systems
- bio-analogue and artificial-life systems
- context and locality
- low power systems design
- machine-learning, prediction, pro-activity
- system design and simulation
- reconfigurable hardware and software systems
- safety, security, reliability
- self-managing service configuration

Architectures and Systems

- computer and system architecture
- modular distributed devices
- self-managing, self-healing systems
- real-time systems
- mobile and wearable devices
- embedded systems

Applications

- scenarios for ubiquitous and pervasive comp.
- autonomic environments
- network based applications
- semantic networks
- ubiquitous, home and wireless networking

Important Dates

October 3, 2004 Conference paper submission due

October 1, 2004 Workshop and tutorial proposal due

December 1, 2004 Notification of acceptance/rejection

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