



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.

ARCS 2005 continues and replaces the biennial series of German Conferences on Architecture of Computing Systems. This 18th conference in the series serves as a forum to present current work on all aspects of computer and systems architecture. Besides its main focus, the conference is open for more general and interdisciplinary themes in operating systems, networking, and computer architecture. 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

The conference is organized by the special interest group on Computer and Systems Architecture of the GI (Gesellschaft für Informatik - German Informatics Society) and ITG (Informationstechnische Gesellschaft - Information Technology Society), supported by OCG (Austrian Computer Society), OVE/GIT (Austrian Electrotechnical Association) and electrosuisse (ITG), and held in cooperation with IFIP, ACM and IEEE (approval requested). In addition to technical sessions of contributed paper presentations, the conference will offer invited presentations, workshops, and tutorials.

The conference proceedings will be published in the 'Lecture Notes in Computer Science' series by Springer-Verlag. 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/>. Selected papers will be published in the Personal and Ubiquitous Computing Journal. 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.

Important Dates

September 20, 2004 Conference paper submission due

October 1, 2004 Workshop and tutorial proposal due

December 1, 2004 Notification of acceptance/rejection

Official Address

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