CALL FOR PAPERS - SOMRES 2011

The First Workshop on Synthesis and optimization Methods for Real-Time Embedded Systems (SOMRES 2011)
http://retis.sssup.it/synthesys/

In conjunction with the IEEE Real-Time Systems Symposium (RTSS 2011) http://cse.unl.edu/rtss2008

November 29, Vienna, Austria.

Scope of the Workshop

Starting from the 90s, the results of the real-time research community have been increasingly used in the software industry for the development and analysis of operating systems scheduling policies and network medium access control protocols. Today, with the increasing complexity and distribution of real-time embedded systems, which triggered the advent of cyber-physical systems, the use of timing analysis techniques needs to be put forward as much as possible in the flow, using them as an aid to the design and changing the perspective: from the analysis of a given configuration to the synthesis of an optimal design.

Developers are today increasingly faced with design problems, including the optimal placement of functions, the optimal assignment of priorities (or time slots) to tasks and messages and the optimal packing of communication signals in frames.

Because of the extremely large design space, a trial-and-error approach , in which a configuration is manually defined, then analyzed for schedulability and then possibly improved or fixed is no more practical and synthesis and optimization methods are needed. The problem is of course relevant also for purely hardware (or programmable hardware) embedded designs, where the need for design synthesis has been established for quite some time now.

Workshop Topics and Format

The workshop presentations will include a selection of original submitted papers, invited presentations and keynote speakers and possibly invited talks discussing experiences with projects and case studies. The topics include (and are possibly not limited to)

- Optimization of system configuration against timing constraints
- Formalization of feasibility regions against time constraints for new and original problems
- New algorithms and methods for finding optimality in timing problems or bounding the error with respect to optimal solutions
- Definition of multi-parameter optimality problems in real cases and solutions
- Case studies including synthesis of system design of system parameters agaist constraints and metrics that include time
- Task design optimization and Task synthesis
- Scheduler synthesis and optimization of scheduling parameters

Workshop Organizers

Samarjit Chakraborthy Technical University of Munich
Marco Di Natale Scuola Superiore S. Anna marco@sssup.it
Rolf Ernst Braunschweig University

Technical Program Committee

Sanjoy Baruah	University of North Carolina, USA
Enrico Bini	Scuola Superiore S. Anna, Pisa, Italy
Tommaso Cucinotta	Scuola Superiore S. Anna, Pisa, Italy
Abhijit Davare	Intel Corp., USA
Petru Eles	Linkoping University, Sweden

Andrea Marongiu	Università di Bologna, Italy
Luigi Palopoli	Università di Trento, Italy
Alberto Sangiovanni-Vincentelli	University of California, Berkeley, USA
Lothar Thiele	ETH Zurich, Switzerland
Haibo Zeng	General Motors R&D, Palo alto, USA
Qi Zhu	Intel corp. USA

Paper Submission and Formatting Instructions

SOMRES seeks original unpublished contributions of no more than 6 pages. The format of submitted papers must follow the IEEE conference proceedings guidelines (i.e., 8.5" x 11", Two-Column Format (see ftp://pubftp.computer.org/press/outgoing/proceedings/). All papers will be reviewed .

Submissions must cover original research material, not necessarily fully developed but with innovative and stimulating ideas, concepts and realizations. Submitted papers should be sent before the deadline to any of the organizers' email addresses.

Position papers are acceptable, discussing the ideas of the authors with respect to a specific challenging problem.

Each accepted paper must be presented in person by one of the authors. Note that, in order to have the paper published in the proceedings, at least one of the authors of each accepted full or short paper must register by paying the full registration fee as a participant to the workshop.

Important Dates

- Paper submissions due: September 15th, 2011
- Acceptance notification: October 15th, 2011
- Camera ready version due: October 31st, 2011