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# Embedded Software

First International Workshop, EMSOFT 2001
Tahoe City, CA, USA, October 8-10, 2001
Proceedings

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# Preface

This volume contains the proceedings of EMSOFT 2001, the *First International Workshop on Embedded Software*. The workshop was organized October 8–10, 2001, at Tahoe City, California. The steering committee of the workshop has the following members:

Gérard Berry (Esterel Technologies, France)
Paul Hudak (Yale University, USA)
Hermann Kopetz (Technical University of Vienna, Austria)
Edward Lee (University of California, Berkeley, USA)
Ragunathan Rajkumar (Carnegie Mellon University, USA)
Alberto Sangiovanni-Vincentelli (University of California, Berkeley, USA)
Douglas Schmidt (Defense Advanced Research Projects Agency, USA)
Joseph Sifakis (Verimag Grenoble, France)

The workshop was sponsored jointly by the DARPA Information Technology Office within the MobIES (Model-based Integration of Embedded Systems) program (Dr. Janos Sztipanovits), and by the National Science Foundation (Dr. Helen Gill). The workshop URL is www.emsoft.org.

Embedded software is software that interacts with physical processes. As embedded systems increasingly permeate our daily lives on all levels, from microscopic devices to international networks, the cost-efficient development of reliable embedded software is one of the grand challenges in computer science today. The purpose of the workshop is to bring together researchers in all areas of computer science that are traditionally distinct but relevant to embedded software development, and to incubate a research community in this way. The workshop aims to cover all aspects of the design and implementation of embedded software, including operating systems and middleware, programming languages and compilers, modeling and validation, software engineering and programming methodologies, scheduling and execution time analysis, networking and fault tolerance, as well as application areas, such as embedded control, real-time signal processing, and telecommunications.

All presentations at the workshop were by invitation. The following speakers were invited:

Perry Alexander (University of Kansas, USA)
Rajeev Alur (University of Pennsylvania, USA)
Albert Benveniste (INRIA/IRISA Rennes, France)
Gérard Berry (Esterel Technologies, France)
Manfred Broy (Technical University of Munich, Germany)
Kenneth Butts (Ford Motor Company, USA)
Paul Caspi (Verimag Grenoble, France)
Patrick Cousot (École Normale Supérieure Paris, France)
David Culler (University of California, Berkeley, USA)

Ron Cytron (Washington University, USA)
Luca de Alfaro (University of California, Santa Cruz, USA)
Thomas Henzinger (University of California, Berkeley, USA)
Paul Hudak (Yale University, USA)
Kevin Jeffay (University of North Carolina, USA)
Hermann Kopetz (Technical University of Vienna, Austria)
Edward Lee (University of California, Berkeley, USA)
Sharad Malik (Princeton University, USA)
Krishna Palem (Georgia Institute of Technology, USA)
Wolfgang Pree (University of Constance, Germany)
Ragunathan Rajkumar (Carnegie Mellon University, USA)
Martin Rinard (Massachusetts Institute of Technology, USA)
John Rushby (SRI International, USA)
Alberto Sangiovanni-Vincentelli (University of California, Berkeley, USA)
Shankar Sastry (University of California, Berkeley, USA)
Douglas Schmidt (Defense Advanced Research Projects Agency, USA)
Joseph Sifakis (Verimag Grenoble, France)
John Stankovic (University of Virginia, USA)
Janos Sztipanovits (Vanderbilt University, USA)
Lothar Thiele (ETH Zürich, Switzerland)
Pravin Varaiya (University of California, Berkeley, USA)
Steve Vestal (Honeywell Laboratories, USA)
Reinhard Wilhelm (University of Saarbrücken, Germany)
Niklaus Wirth (ETH Zürich, Switzerland)
Wayne Wolf (Princeton University, USA)

In addition to the invited presentations, there were two panels at the workshop. The first group of panelists was from industry; they discussed the current and future challenges in the industrial development of embedded software. The second group of panelists was from academia; they discussed how the community should organize itself to further both research and education in embedded software.

We are grateful to the steering committee, the invited speakers, the sponsors, and the panelists for making the workshop a success. In addition, we wish to thank Cynthia Ernest, Charlotte Jones, Peggy Kingsley, and Peter Ray for help with the workshop organization.

July 2001

Tom Henzinger
Christoph Kirsch

# Table of Contents