

LfSA'10 – Logics for System Analysis

Workshop Affiliated with IJCAR and LICS at FLoC 2010 — July 15th, 2010, Edinburgh, UK

Call for Papers

Safety-critical systems frequently occur as real-time systems, embedded systems, hybrid systems, distributed systems, and cyber-physical systems. They are also becoming more and more important in many application domains, including aviation, automotive, railway, robotic, or medical applications. To ensure the correct functioning of safety-critical systems it is necessary to model and reason about hardware (including physical properties or movement), software, communication aspects, and qualitative and quantitative aspects of the system environment.

Logics for system analysis, system modeling, and specification, are primary tools to analyze system behavior. Logic is equally important for understanding the theoretical foundations of system analysis and as the basis for practical analysis tools that establish correct functioning of systems or find bugs in their designs. Depending on the nature of the system, modeling languages that are amenable to logical analysis and the study of correctness properties include logical representations, automata, state charts, Petri nets, dataflow models, or systems of differential equations. Several system models can be analyzed rigorously with the help of techniques such as logical calculi, decision procedures, model checking, and abstraction.

LfSA'10 is devoted to the systematic theoretical study, practical development, and applied use of logics for system analysis. The purpose of the LfSA workshop is to bring together researchers and practitioners interested in studying practically relevant systems or in developing the logical foundations and analysis tools for their study.

Topics

Logics for safety-critical systems (real-time, embedded, hybrid, distributed, stochastic, cyber-physical)

Logic-based methods for development of safety-critical systems

System representations using logics, automata, modeling languages, state charts, Petri nets, dataflow models

Theories, decision procedures, and calculi for system analysis

Model checking, theorem proving, and systematic testing

Case studies for logical system analysis

Applications of system analysis to industrial problems (including automotive, aviation, railway, robotics, process control, mixed analog/digital circuits in chip design)

In particular, we invite contributions that bridge the gap between theory and practice or that combine different application domains.

Submission Categories

Regular papers (up to 15 pages), which should present previously unpublished work (completed or in progress), including descriptions of research, tools, and applications.

Short papers (up to 5 pages), which describe work in progress or aim at initiating discussions.

Presentation-only papers, i.e., papers already submitted or presented at a conference or another workshop; such papers will not be included in the LfSA proceedings but will be presented during the workshop.

In addition to informal and electronic workshop proceedings, we consider the option of a special issue in a journal after the workshop.

Workshop/Programme Chairs

André Platzer
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Philipp Rümmer
Oxford University
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Invited Speakers

Thomas A. Henzinger (*IST Austria*)
(second invited speaker TBA)

Programme Committee

R. Barbosa (*Chalmers, Gothenburg*)
A. Cimatti (*IRST Trento*)
S. Demri (*CNRS Cachan*)
J. Esparza (*TU Munich*)
G. E. Fainekos (*Arizona State U.*)
M. Giese (*U. of Oslo*)
F. Ivančić (*NEC Lab. Princeton*)
E. B. Johnsen (*U. of Oslo*)
D. Kozen (*Cornell, Ithaca*)
D. Kroening (*Oxford U.*)
B. H. Krogh (*Carnegie Mellon U.*)
M. Kwiatkowska (*Oxford U.*)
L. Meinicke (*Macquarie U., Sydney*)
G. J. Pappas (*U. of Pennsylvania*)
J.-F. Raskin (*U. Libre de Bruxelles*)
P. H. Schmitt (*Karlsruhe U.*)
V. Sofronie-Stokkermans
(*MPI Saarbrücken*)
C. Tinelli (*The U. of Iowa*)
U. Waldmann (*MPI Saarbrücken*)

Important Dates/Deadlines

Abstract submission: March 25, 2010
Paper submission: April 1, 2010
Notification: April 28, 2010
Final version due: May 20, 2010
Workshop: July 15, 2010

Workshop Webpage

<http://www.ls.cs.cmu.edu/LfSA10>

Submission via EasyChair

<https://www.easychair.org/login.cgi?conf=lfsa2010>