Workshop

Models@run.time

Workshop in conjunction with MoDELS/UML 2006

- **NOTE** that the name of the workshop has changed to resolve a name clash with an existing workshop

Call for Papers

Motivation
We are witnessing the emergence of new classes of application that are highly complex, inevitably distributed, and operate in heterogeneous and rapidly changing environments. Examples of such applications include those from pervasive and Grid computing domains. These systems are required to be adaptable, flexible, reconfigurable and, increasingly, self-managing. Such characteristics make systems more prone to failure when executing and thus the development and study of appropriate mechanisms for runtime validation and monitoring is needed.

In the model-driven software development area, research effort has focused primarily on using models at design, implementation, and deployment stages of development. This work has been highly productive with several techniques now entering the commercialisation phase. The use of model-driven techniques for validating and monitoring run-time behaviour can also yield significant benefits. A key benefit is that models can be used to provide a richer semantic base for run-time decision-making related to system adaptation and other run-time concerns. For example, one can use models to help determine when a system should move from a consistent architecture to another consistent architecture. Model-based monitoring and management of executing systems can play a significant role as we move towards implementing the key self-* properties associated with autonomic computing.

Goal
The goal of this workshop is to look at issues related to developing appropriate model-driven approaches to monitoring and managing the execution of systems. This is the first workshop to address this theme and its treatment requires the bringing together of a variety of communities including researchers working on model-driven software development, software architectures, reflection (including for example architectural reflection), and autonomic and self healing systems. Discussions in the workshop will address questions such as: What should a runtime model look like? How can the models be maintained at runtime? What are the best approaches to follow when developing runtime models?

Workshop format
The workshop participants will be selected based on their experience and ideas related to this new and emerging field. You are invited to apply for attendance by sending a 2 to 4 page position paper (using 11 or 12 pt fonts) in PDF or PS. Submissions will be reviewed by the organizers. The authors will be notified about acceptance before the MoDELS 2006 early registration deadline.
A primary deliverable of the workshop is a report that clearly outlines (1) the research issues and challenges in terms of specific research problems in the area, and (2) a synopsis of existing model-based solutions that target some well-defined aspect of monitoring and managing the execution of systems. Potential attendees are strongly encouraged to submit position papers that clearly identify research issues and challenges or present techniques that address well-defined problems in the area. The first part of the workshop will focus on identifying the research issues and challenges and framing an initial set of research questions. The second part of the workshop will focus on discussing approaches for tackling the problems; in particular, the integration of runtime models with model-driven development approaches will be discussed.

The best position papers will be published in IEEE Distributed Systems online (http://dsonline.computer.org/portal/site/dsonline). The selection will depend on the quality of the papers and the relevance of the papers to the DS community.

The workshop aims to:
- Integrate and combine research ideas from the areas cited above.
- Provide a “state-of-the-research” assessment expressed in terms of research issues, challenges, and accomplishments. This assessment can be used to guide research in the area.
- Initiate a network of researchers in the area. Initially, the researchers in the network will share related experience and research results via a mailing list.
- Plan and promote further events on these topics.

Relevant topics include, but are not limited to:
- The relevance and suitability of different model-driven approaches to monitoring and managing systems during runtime.
- Compatibility (or tension) between different model-driven approaches.
- What should a runtime model look like?
- How do models at other phases of the software engineering lifecycle relate to the corresponding run-time models?
- How can runtime models be maintained?
- How can runtime models be validated?
- What is the role of reflection in maintaining the causal connection between models and run-time systems

Further Information
Web site: http://www.comp.lancs.ac.uk/computing/users/bencomo/MRT06/
Contact: Nelly Bencomo nelly@comp.lancs.ac.uk

Organizing Committee

Organizers

Nelly Bencomo (main contact)
Gordon Blair
Computing Department
Lancaster University, UK

Robert France
Computer Science Department
Colorado State University

Program Committee

Jan Aagedal,
SINTEF, Norway
Walter Cazzola
Università degli Studi di Milano, Italy
Gang Huang
Peking University, China
Jean-Marc Jezequel
Triskell Team,IRISA, France
Rui Silva Moreira
UFP & INESC, Portugal
Marten van Sinderen
Univ. of Twente, The Netherlands
Douglas C. Schmidt
Vanderbilt University, USA
Arnor Solberg
SINTEF, Norway
Thaís Vasconcelos Batista
UFRN, Brasil

Important Dates

Notification of acceptance:
4th September
Workshop at MoDELS:
to be announced