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Deadlines:

Titel und abstract: **September 25, 2011**
Early Registr.: **September 30, 2011**

Organizer



**Vienna University of Technology,
Institute of Computer Languages**

Sponsor



International ISoLA Workshop on Machine Learning for Software Construction

October 17 - 18, 2011 - Vienna University of Technology

<http://www.cs.uni-potsdam.de/isola2011>

Most systems in use today lack adequate specifications or make use of un/under-specified components. In fact, the popular component-based software design paradigm naturally leads to under-specified systems, as most libraries only provide very partial specifications of their components. Moreover, typically, revisions and last minute changes hardly enter the system specification.

As can be observed in many practical contexts, revision cycle times are often extremely short, which make the maintenance of specifications unrealistic, and at the same time these short cycles necessitate extensive testing effort. More generally, the lack of documentation is felt in many places among which quality control is one of the most prominent.

Machine learning has been proposed to overcome this situation by automatically 'mining' and then updating the required information. Promising results have been obtained here using active automata learning technology, and there seems to be a high potential to exploit also other machine learning techniques.

The workshop is intended to provide a forum for discussing this potential inspired by, but not restricted to the context of the EternalS Coordination Action, with an emphasis on long-lived, evolving/adaptable systems.

The workshop comprises an 'overview' day (17.10.), with invited talks outlining the various views of the EternalS partners in a tutorial-like fashion, and a planning and discussion day (18.10.), where concrete next steps will be organized, in particular, concerning how to address the identified challenges. One major such step is the organization of a learning competition that will be held during the ISoLA conference in October 2012.

Monday, 17.10.2011

08:30-09:00	Registration
09:00-09:10	Welcome
09:10-10:40	Session 1: Machine Learning I (Bernhard Steffen) <ul style="list-style-type: none"> • Alessandro Moschitti: Introduction to Machine Learning • Riccardo Scandariato: Patterns of co-evolution: a learning perspective?
10:40-11:00	Coffee break
11:00-12:15	Session 2: Machine Learning II (Alessandro Moschitti) <ul style="list-style-type: none"> • Bjarte M. Østvold: A Hierarchical Variability Model for Software Product Lines • Tomas Piatrik: Swarm Intelligence - Where Biology meets Computers
12:15-14:00	Lunch Break
14:00-15:30	Session 3: Automata Learning I (Michael Felderer) <ul style="list-style-type: none"> • Karl Meinke: Learning-Based Software Testing: a Tutorial • Michael Felderer and Matthias Gander: Monitoring Anomalies in IT-Landscapes Using Clustering Techniques
15:30-16:00	Coffee Break
16:00-18:00	Session 4: Automata Learning II (Falk Howar) <ul style="list-style-type: none"> • Amel Bennaceur, Daniel Sykes: The Role of Learning in Emergent Middleware • Bernhard Steffen: Learning and Testing: A Symbiosis • Maik Merten: Connecting to Real Systems: From Mapper Generation to Model-Based Monitoring • Bjarte M. Østvold: Extracting Abstract Behavioural Models from JMS Applications

Tuesday, 18.10.2011

08:30-09:00	Registration
09:00-10:30	<ul style="list-style-type: none"> • Aliaksei Sevryn: Practical Exercise • Falk Howar, Maik Merten: Introduction to the LearnLib
10:30-11:00	Coffee break
11:00-12:15	Closing Session <ul style="list-style-type: none"> • Bernhard Steffen: The RERS Challenge • Wrap Up and Planning
12:15-14:00	Lunch Break
14:00-15:30	Working Meeting