3rd International Workshop on Domain-Specific Languages and models for ROBotic systems (DSLRob-12)

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DSLRob-12, Tsukuba, Japan

Domain-Specific Languages (DSLs) and Model-driven Software Development (MDSD) are emerging areas of interest in the robotics research community. Both have been instrumental for resolving complex issues in a wide range of domains, including e.g. distributed and modular robotics, control, and vision.

The goal of this workshop is to bring together robotics researchers working with DSLs and models in different aspects of robotics. DSLs and models are key elements in many robotic systems presented at leading conferences such as IROS and ICRA, but the domain-centric structure of the typical robotics conference does not offer a natural venue for exchange of ideas regarding DSLs and models.

The intended audience is those robotics researchers throughout the entire robotics community who use DSLs and models as a key component of their robotics software infrastructure. In addition, robotics researchers with an interest in modern approaches to solving complex software-related issues will find the workshop inspirational.

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DSLRob 2010 at IROS 2010 (Taipei)

4 papers

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DSLRob 2011 at IROS 2011 (San Francisco)
4 papers

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This workshop will focus on the use of Domain-Specific Languages and Models for Robotic Systems. Topics that are of special interest include:

- domain-specific languages to express reactive behaviors, composition of behaviors, motion description languages (MDL),
- domain-specific languages to express uncertainty, modelling of physical system, real-time constraints,
- domain-specific languages to describe cooperative robotics and modular robotics systems,
- tools support and frameworks for describing and manipulating DSLs, models and meta-models for robotic systems,
- code generation and code transformation for robotics systems, variability in robotic systems,
- meta-models to express robotic specific structures and best practices,
- frameworks to combine DSLs in an uniform manner,
- benchmarks to compare use of DSL vs general-purpose programming, and
- programming languages in the context of robotic systems, visual languages for robots, languages to teach robotics.

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Program committee

Alexandre Bergel, University of Chile, Chile
Geoffrey Biggs, AIST, Japan
Mirko Bordignon, Digipack Automation, Sanovo Technology Group
Damien Cassou, INRIA, France
Akim Demaille, EPITA/LRDE, France
Jeff Gray, University of Alabama, USA
Sylvain Joyeux, DFKI, Germany
Henrik Nilsson Henrik Nilsson, University of Nottingham, UK
Patrick Martin, York College of Pennsylvania, USA
Walid Taha, Halmstadt University, Sweden
Christina Vicente-Chicote, University of Cartagena, Spain
Mikal Ziane, LIP6, France

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10:00 - 10:15	Welcome and Opening / Christian Schlegel, Serge Stinckwich
10:15 - 10:45	Juan Francisco Inglés-Romero, Alex Lotz, Cristina Vicente Chicote and Christian Schlegel. ***Dealing with Run-Time Variability in Service Robotics: Towards a DSL for Non-Functional Properties***
10:45 - 11:15	Andreas Angerer, Remi Smirra, Alwin Hoffmann, Andreas Schierl, Michael Vistein and Wolfgang Reif. ***A Graphical Language for Real-Time Critical Robot Commands***
11:15 - 11:45	Markus Klotzbücher, Herman Bruyninckx and Geoffrey Biggs. ***Pure Coordination using the Coordinator-Configurator Pattern***
11:45 - 12:15	Tinne De Laet, Wouter Schaekers, Jonas de Greef and Herman Bruyninckx. ***Domain Specific Language for Geometric Relations between Rigid Bodies targeted to robotic applications***
12:15 - 13:45	LUNCH BREAK
13:45 - 14:15	Arne Nordmann and Sebastian Wrede. ***A Domain-Specific Language for Rich Motor Skill Architectures***
14:15 - 14:45	Walid Taha and Roland Philippsen. ***Modeling Basic Aspects of Cyber-Physical Systems***
14:45 - 15:15	COFFEE BREAK
15:15 - 17:00	DISCUSSION - roadmap (hot topics, priorities, benefits) of issues related to the WS topics

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Discussion

- all of a sudden, 20 PhD students ask you: what is a hot topic in that field?

- hot topics?
  - DSLs, Meta-Models, MDSD, …
- domains?
  - already covered and solved
  - tried to address but not yet solved in a satisfying way
  - badly needed but not yet addressed
- research roadmap?
  - milestones, benefits, priorities?
- community services
  - JOSER, RAS-TCSOFT, forum?
  - which stakeholders to involve?