4th International Workshop on Domain-Specific Languages and models for ROBotic systems (DSLRob-13)

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DSLRob-13, Tokyo, 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.

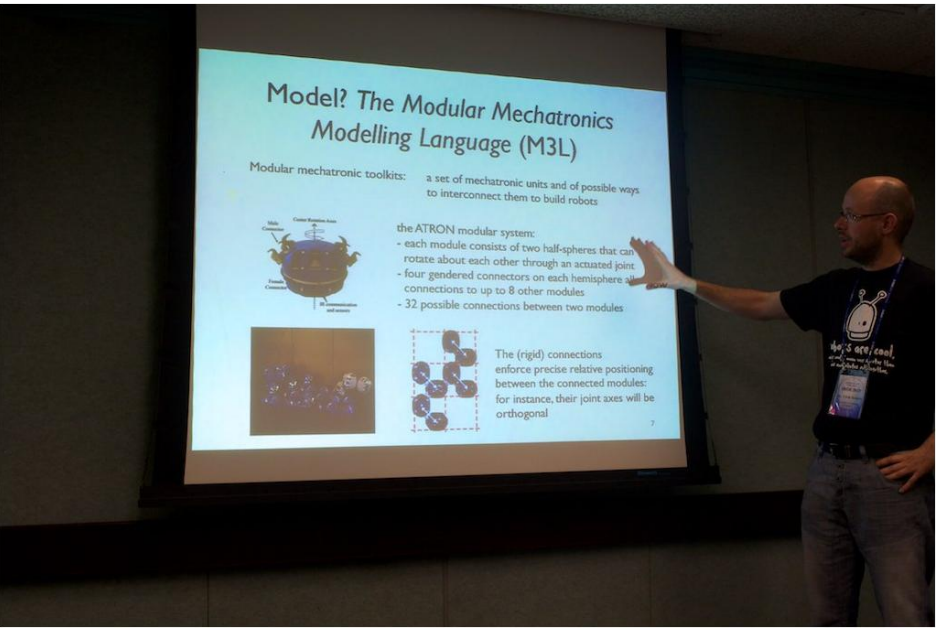
The goal of this workshop is to bring together robotics researchers working with DSLs and models in different aspects of robotics.

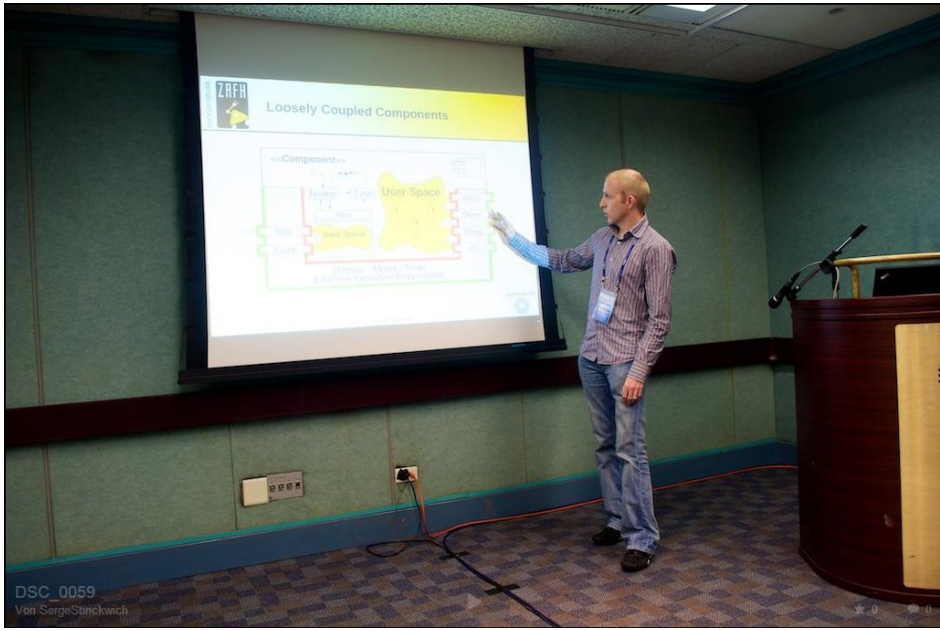
The main objective of this workshop is a cross-pollination of ideas between robotics researchers in DSLs and models from different domains. DSLs and models are key elements in many robotic systems presented at leading conferences such as IROS and ICRA, but the domain-centric structure of the typical 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.


DSLRob-13, Tokyo, Japan

1st DSLRob 2010 at IROS 2010 (Taipei)
4 papers



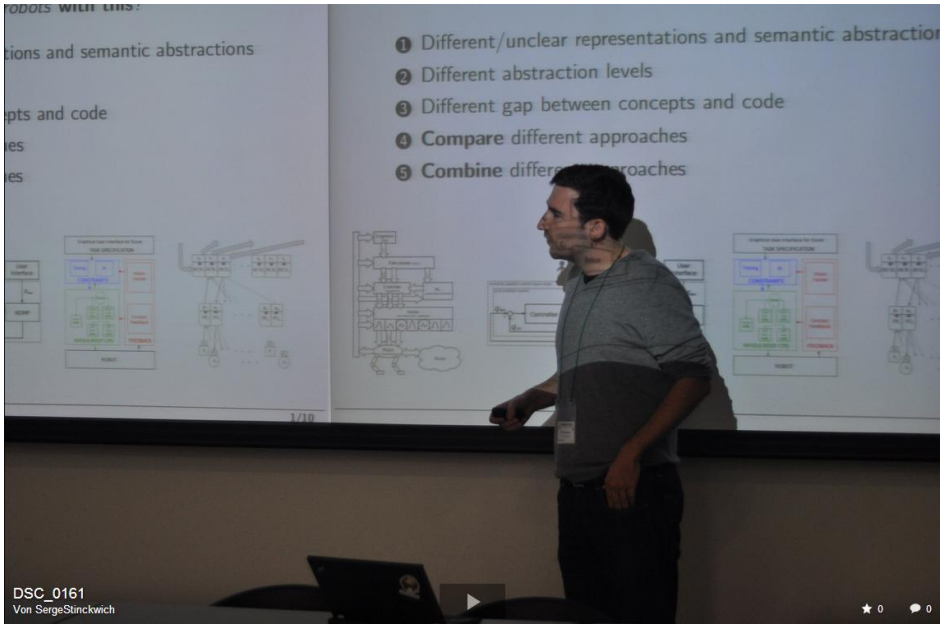


DSLRob-13, Tokyo, Japan

2nd DSLRob 2011 co-located at IROS 2011 (San Francisco)
4 papers

DSLRob-13, Tokyo, Japan

3rd DSLRob 2012 at SIMPAR 2012 (Tsukuba)
6 papers



4th DSLRob 2013 co-located at IROS 2013 (Tokyo)
7 papers

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.

Program committee

Alexandre Bergel, University of Chile, Chile
Geoffrey Biggs, AIST, Japan
Mirko Bordignon, Digipack Automation, Sanovo Technology Group
Herman Bruyninckx, University of Leuven, Belgium
Saadia Dhouib, CEA List, France
Hugo A. Garcia, University of Leuven, Belgium
Issa Nesnas, JPL Robotics, USA
Cyril Novales, PRISME, France
Jeff Gray, University of Alabama, USA
Henrik Nilsson, University of Nottingham, UK
Patrick Martin, York College of Pennsylvania, USA
Walid Taha, Halmstadt University, Sweden
Christina Vicente-Chicote, University of Extremadura, Spain
Mikal Ziane, LIP6, France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09:45 - 10:00	Welcome and Opening / Christian Schlegel, Serge Stinckwich
10:00 - 10:30	Selma Kchir, Tewfik Ziadi, Mika Ziane, Serge Stinckwich
	A Top-Down Approach to Managing Variability in Robotics Algorithms
10:30 - 11:00	Md. Abdullah Al Mamun, Christian Berger, Jorgen Hansson
	Engineering the Hardware/Software Interface for Robotic Platforms:
	Comparison of Applied Model Checking with Prolog and Alloy
11:00- 11:30	Yingfu Zeng, Chad Rose, Paul Brauner, Walid Taha, Jawad Masood, Roland Philippsen, Marcia O'Malley, Robert Cartwright
	Modeling Basic Aspects of Cyber-Physical Systems, Part II
11:30 - 13:15	LUNCH BREAK
13:15 - 13:45	Thomas Buchmann, Johannes Baumgartl, Dominik Henrich, Bernhard Westfechtel
	Towards A Domain-specific Language For Pick-And-Place Applications
13:45 - 14:15	Nico Hochgeschwender, Sven Schneider, Holger Voos, Gerhard K. Kraetzschmar
	Towards a Robot Perception Specification Language
14:15 – 14:45	Anders Lange, Anders Sorensen, Ulrik Schultz
	Towards Automatic Migration of ROS Components from Software to Hardware
14:45 – 15:15	Sebastian Blumenthal, Herman Bruyninckx
	Towards a Domain Specific Language for a Scene Graph based Robotic World Model
15:15 - 15:30	COFFEE BREAK
15:30- 17:00	DISCUSSION - roadmap (hot topics, priorities, benefits) of issues related to the WS topics

News

- community services
  - we now have a google-group: **ras-tcsoft@googlegroups.com**

- IROS 2013
  - organized session ”Software Engineering for Robotics”

- IROS 2013 Workshop Review => co-located to IROS

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Serge Stinckwich, Ulrik Pagh Schultz, Christian Schlegel
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Type of submission:   Tutorials and Workshops
Conference:           IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS 2013)
Submission number:    1889

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Comments:
This workshop focuses on domain-specification language to model and control robots. The idea is
to optimize the use of domain expert in domain-specified languages. Schedule of this workshop
should be clarified.
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