Second Call for Papers and Posters/Demos

HSB 2016: The 5th International Workshop on Hybrid Systems Biology

20-21 October 2016
Grenoble (France)

`http://hsb2016.imag.fr/`

Proceedings in Springer LNCS/LNBI series

The 5th International Workshop on Hybrid Systems Biology will be held on October 20th and 21st in Grenoble (France). Previous editions have been held in Newcastle upon Tyne (UK), Taormina (Italy), Vienna (Austria, at VSL 2014), and Madrid (Spain, co-located with Madrid Meet 2015).

Please refer to the conference website for constantly updated information. Confirmed invited speakers as of May 30, 2016:

- Dennis Bray (University of Cambridge)
- Albert Goldbeter (Université Libre de Bruxelles)
- Linda Petzold (UC Santa Barbara)

Important dates

Initial submission: June 16, 2016
Notification: July 16, 2016
Final Submission: August 1, 2016

Accepted submissions are for papers and posters/demos (see further below)

Topics of interest

HSB is a single-track Systems Biology workshop with emphasis on hybrid approaches in a general sense. Hybrid dynamical modelling but also other dynamical modelling approaches are equally part of the scope of the workshop. Interdisciplinary contributions, such as combining modelling, analysis, algorithmic and experimental techniques from different areas, are especially welcome.

Topics of interest include, but are not limited to:

- Modelling and analysis of metabolic, signalling, and genetic regulatory networks in living cells
- Models of tissues, organs, physiological models
- Cyber-biological systems (e.g. integration of computation, networking and biological processes, medical devices, design and verification of molecular devices, engineered transcription networks)
- Models and methods coping with incomplete, uncertain and heterogeneous information
- Stochastic and hybrid models in biology
- Hierarchical systems for multi-scale, multi-domain analysis
- Abstraction, approximation, discretisation, and model reduction techniques
- Modelling, analysis and design for synthetic biology
- Population models in biology (e.g. Mixed-Effects and Bayesian modelling)
- Parametric and non-parametric learning for biological systems (methods for biological system identification and model selection, online and offline parameter and state estimation methods, inference from experimental data, constrained estimation)
- Biological applications of quantitative and formal analysis techniques (e.g. reachability computation, model checking, abstract interpretation, bifurcation theory, stability and sensitivity analysis)
- Efficient techniques for combined and heterogeneous (stochastic/deterministic, spatial/non-spatial) simulations for biological models
- Modelling languages and logics for biological systems, with related analysis and simulation tools
- Control architectures of biological systems
- Game-theoretical frameworks in biology (e.g., populations dynamics)
- Biology-in-the-loop systems (computer control of living systems, bio-robotics)
- Dynamical modelling for biomedical studies (e.g. therapies, teleoperation)

Call for contributions

We solicit high-quality submissions, to be refereed by the Program Committee below, to be included in the oral presentation sessions of the workshop. Following an established tradition of the conference, accepted papers will be published in a conference proceedings volume of the Springer LNCS/LNBI series (`http://www.springer.com/lncs`).

Submitted papers shall describe original work that has not been previously published and is not under review for publication elsewhere. We will consider the following two types of submissions:

Full papers (full-blown research work contributing theoretical analysis, methods, algorithms for biology/biomedicine, as well as novel results on biological case studies)

Short papers (work in progress, tool papers and small case studies)

Paper length is initially set to 15 pages for full papers, and 6 pages for short papers, in accordance with the LNCS Springer style.
In addition we accept submissions for posters and tool demonstration, to be included in a dedicated poster/demo session of the workshop.
Submissions shall be in the following form:

One-page poster/demo abstract (concise description of the research topic, ongoing work, first results or advancements on existing results, objectives and features or further developments of a new or improved tool)

Abstracts and posters will not be published. Suitable contributions that could not be included in the workshop oral presentation sessions will be reconsidered for the poster/demo session.

Publication forms and paper submission

Papers should be written in English, and should not exceed 6 (short papers) or 15 pages (full papers), inclusive of references, and have to be formatted in LNCS style.
Additional material may be included in a clearly marked appendix but will not be included in the published version.
Papers need to be submitted electronically as PDF files via the EasyChair online submission system (`https://easychair.org/conferences/?conf=hsb2016`)

Conference registration and enrollment costs

Registration dates, procedures and costs will be posted in due time on the conference website.

Program committee chairs

- Eugenio Cinquemani, INRIA, Grenoble, France
- Alexandre Donzé, University of California, Berkeley, USA

Program committee

- Alessandro Abate, University of Oxford, UK
- Frank Allgower, University of Stuttgart, Germany
- Ezio Bartocci, TU Wien, Austria
- Gregory Batt, INRIA Saclay - Île-de-France, France
- Joke Blom, CWI, The Netherlands
- Sergiy Bogomolov, IST Austria
- Luca Bortolussi, University of Trieste, Italy
- Luca Cardelli, Microsoft Research, UK
- Milan Ceska, Department of Computer Science, University of Oxford, UK

- Eugenio Cinquemani, INRIA Grenoble - Rhone-Alpes, France
- Pieter Collins, Maastricht University, The Netherlands
- Thao Dang, CNRS/VERIMAG, France
- Hidde De Jong, INRIA Grenoble - Rhone-Alpes, France
- Alexandre Donzé, UC Berkeley, EECS Department, USA
- François Fages, INRIA Saclay - Île-de-France, France
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- Andrzej Mizera, University of Luxembourg
- Chris Myers, University of Utah, USA
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- Ion Petre, Department of Computer Science, Åbo Akademi University, Finland
- Alberto Policriti, University of Udine, Italy
- Tatjana Petrov, IST Austria
- Carla Piazza, University of Udine, Italy
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- Jana Tumova, Royal Institute of Technology, Sweden
- Verena Wolf, Saarland University, Germany
- Boyan Yordanov, Microsoft Research, UK
- Paolo Zuliani, Newcastle University, UK

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- Alessandro Abate, University of Oxford, Oxford, UK
- David Šafránek, Masaryk University, Brno, Czech Republic