Dagstuhl Seminar 17382

Approaches and Applications of Inductive Programming

September 17 – 20 2017

http://www.dagstuhl.de/de/programm/kalender/semhp/?semnr=17382

Stephen H. Muggleton (Imperial College London, GB)

Ute Schmid (Universität Bamberg, DE)

Rishabh Singh (Microsoft Research – Redmond, US)

Tentative Schedule

Monday, Sept. 18

09:00-09:30 Welcome – Organizers
Short Introduction – Participants

09:30-10:30 Introdcution to IP
Ute Schmid: Inductive Functional Programming
Stephen Muggleton: Inductive Logic Programming
Luc De Raedt: Probabilistic ILP
Rishabh Singh: Programming by Example

10:30-11:00 Coffee Break

11:00-12:15 Short Talks (10-15 min each)
Richard Evans (Google DeepMind London): Applying ILP to sequence induction tasks (Hofstadter SeekWhence Problems)
Lidia Contreras-Ochando (Technical University of Valencia): Automating data wrangling using inductive programming with domain-specific background knowledge (with MagicHasekller)
Andrew Cropper (Imperial College London): Learning higher-order logic programs through abstraction and invention
Stephen H. Muggleton (Imperial College London): The Draughtsman's Assistant

1*2:15-13:30 Lunch Break*

13:30-15:00 Short Talks
Fabrizio Riguzzi (University of Ferrara): Probabilistic ILP with SLIPCOVER (Ttutorial, 30 min)
Luc De Raedt (KU Leuven): Learning Constraints (in Tabular Data)
Michael Siebers (University of Bamberg): Learning to Forget –First Explorations with ProbFoil
Cesar Ferri Ramirez (Technical University of Valencia): Meta-Learning and security

15:00-15:30 Setting Up Discussion Groups

15:30-16:00 Coffee Break

16:00-18:00 Discussion Groups

18:00–19:00 Dinner

19:30-21:00 System Demos I
(Igor-Seufert, MagicHaskeller-Katayama, Prose-Polozov, Slipcover-Riguzzi, TaCLe-deRaedt)

Tuesday, Sept. 19

09:00-10:00 Presentations of Discussion Groups

10:00-10:30 Short Talks

Ute Schmid (University of Bamberg): Human Learning in the Michalski Train Domain
Stephen H. Muggleton (Imperial College London): Towards Ultra-Strong Machine Learning Comprehensibility of Programs Learned with ILP

10:30-11:00 Coffee Break

11:00-12:15 Short Talks

Claes Strannegård (Chalmers University of Technology Göteborg): Learning and decision-making in artificial animals
Elena Glassman (University of California Berkeley: Interacting with Program Synthesis by Example: Designing Around Human Cognition (with PROSE based systems)
David Nieves Cordones (Technical University of Valencia): Learning Procedural knowledge for an automated monitoring system (SUPERVASION project)
Susumu Katayama (University of Miyazaki): A MagicHaskeller-based incrementally learning agent

12:15-13:30 Lunch

13:30-15:30 Small Excursion

15:30-16:00 Coffee Break

16:00-17:30 Short Talks

Aws Albarghouthi (University of Wisconsin Madison): The BigLambda Project: Synthesis for Data Analytics
Risgabh Singh ((Microsoft Research Redmond): Neural Program Synthesis
Katsumi Inoue (National Institute of Informatics Tokyo): Learning programs from observations
Hila Peleg (Technion Haifa): Programming not only by examples
Sebastian Seufert (University of Bamberg) and Janis Voigtländer (University Duisburg-Essen): Inductive Programming for Bidirectional Transformations – A Case Study with Igor

17:30-18:00 Continuation of Discussion Groups

18:00-19:00 Dinner

19:30-21:00 System Demos II

Wednesday, Sept. 20

09:00-10:30 Presentations of Discussion Groups, Formulating Action Points

10:30-11:00 Coffee Break

11:00-12:15 Wrapping Up

12:15-13:30 Lunch

13:30-15:00 Informal Meetings

Please note:

- For the introductory round no slides need to be prepared: Each participant gives her/his personal background and main research interests.
- Talks are 15 minutes if not noted otherwise.
- Please avoid conference-style talks -- these tend to provide more answers than questions. Bring questions, show current ideas and insights, not all the details (which are better discussed personally by the few people who are really interested).
- Some technical advice: sometimes people's laptop use a much too high resolution when connected to the Dagstuhl projectors. As a result the projector does not produce an image and time is wasted in the chaos that ensues. The best resolution is 1024x768 pixels. Try out your laptop before your talk, or use a memory stick and the computer that is provided in the lecture hall.
- We encourage you to check out the inductive programming website and to give us your input (people, systems, papers, events) to bring the page up to date: http://www.inductive-programming.org/