

Dagstuhl Seminar 15442

Approaches and Applications of Inductive Programming

25. – 30. Oktober 2015

Organisers:

[Jose Hernandez-Orallo](#) (Polytechnic University of Valencia, ES)

[Stephen H. Muggleton](#) (Imperial College London, GB)

[Ute Schmid](#) (Universität Bamberg, DE)

[Benjamin Zorn](#) (Microsoft Research – Redmond, US)

General Information:

- For the introductory round no slides need to be prepared: Each participant gives her/his personal background and main research interests in about 3 minutes
- Talks are 15 minutes (S) or 30 minutes (L) (number indicate talk time, with sufficient time for discussions afterwards).
- 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 to use a memory stick and the computer that is provided in the lecture hall.
- DemoFest: In this session format anyone who have a demo will be ready to let other attendees sit down with it and try it out. The rest of the attendees mingle between demos like a poster session at a conference.

Monday, Oct. 26 ILP and IFP

09:00-10:30	Welcome Introduction Round (about 3 min per participant)	Org.: Ute Schmid
<i>15 min Coffee Break around 10:30</i>		
	Inductive Logic and Inductive Functional Programming	Chair: Ute Schmid
10:45-11:30	Meta-Interpretive Learning: achievements and challenges (L)	Stephen Muggleton
11:30-12:15	System Demo: Metagol	Andrew Cropper
<i>12:15-13:30</i>	<i>Lunch Break</i>	
13:30-14:15	Probabilistic Inductive Programming (L)	Luc de Raedt
14:15-14:35	Learning Complex Sequential Patterns with Progol (S)	Michael Siebers
14:35-15:15	RuleML as a Declarative Language for Inputs, Outputs, and Background Knowledge in Inductive Programming (L)	Harold Boley
15:15-15:30	General Discussion	
<i>15:30-16:00</i>	<i>Coffee Break</i>	
16:00-16:40	Establishing Discussion Topics and Groups	Org.: Jose Hernandez
16:40-18:00	Hands-on-Tutorial: The MagicHaskell Library and Server System	Susumu Katayama
<i>18:00</i>	<i>Dinner</i>	
19:30 onwards	Informal meetings	

Tuesday, Oct 27 End-user Programming, Programming by Examples, Applications

	End-user Programming, Programming by Example, Applications	Chair: Stephen Muggleton
09:00-09:45	Applications in Data Wrangling (L)	Sumit Gulwani
09:45-10:10	Generic vs. domain specific approaches to IP -- How good does Igor perform on FlashFill problems? (S)	Ute Schmid
<i>15 min Coffee Break around 10:10</i>		
10:25-10:50	Resolving Ambiguity in Inductive Program Synthesis (S)	Rishabh Singh
10:50-11:15	Cooperative programming (S)	Ruzica Piskac
11:15-12:00	Deductive Techniques for synthesis from Inductive Specifications (L)	Sumit Gulwani
12:00-12:15	General Discussion	
<i>12:15-13:00</i>	<i>Lunch Break</i>	
13:00-13:25	Supervision by observation using inductive programming (S)	Jose Hernandez-Orallo
13:25-13:50	Software is Not Fragile (S)	Bill Langdon
13:50-15:30	Discussion groups	
<i>15:30-16:00</i>	<i>Coffee Break</i>	
16:00-16:40	Presentation of Results of Discussion Groups	Org.: Ben Zorn
16:40-18:00	Tutorial: FlashMeta SDK for creating programming-by-example tools	Sumit Gulwani
<i>18:00</i>	<i>Dinner</i>	
<i>19:30 onwards</i>	Informal meetings	

Wednesday, Oct. 28 Integrating Program Paradigms, Program Synthesis and Transformation

	Program synthesis and transformation	Chair: Ben Zorn
09:00-9:25	Synthesis of service specifications: Applying evolutionary algorithms to On-the-fly computing (S)	Lorijn van Rooijen
09:25-09:50	Inductive Program Synthesis for Bidirectional Transformations (S)	Janis Voigtlander
09:50-10:15	Data-Driven Disjunctive Abstraction (S)	Hila Peleg
<i>15 min Coffee Break around 10:15</i>		
10:30-10:55	Transforming source code using examples (S)	Gustavo Soares
10:55-12:00	Tutorial: Sketch synthesis infrastructure	Armando Solar-Lezema
12:00-12:15	General Discussion	
<i>12:15-13:00</i>	<i>Lunch Break</i>	
	<i>Excursion</i>	
<i>18:00</i>	<i>Dinner</i>	
<i>19:30 onwards</i>	Informal meetings	

Thursday, Oct 29 AI and Cognitive Aspects of Induction

	Cognitive Aspects of Induction	Chair: Jose Hernandez
09:00-09:45	Learning new domains without the help of engineers (L)	Claes Strannegard
09:45-10:10	Knowledge acquisition and forgetting in rule-based systems (S)	Nando Martinez Plumed
<i>15 min Coffee Break around 10:10</i>		
10:25-10:50	A Visual Language for Solving Bongard Problems (S)	Frank Jäckel
10:50-11:15	The Artificial Jack of All Trades: The Importance of Generality in Approaches to AI (S)	Tarek Besold
11:15-12:15	General Discussion	
12:15-13:00	<i>Lunch Break</i>	
13:00-15:30	Discussion Groups	Org.: Jose Hernandez
15:30-16:00	<i>Coffee Break</i>	
16:00-17:00	Presentation of Results of Discussion Groups	
17:00-18:00	DemoFest	Org.: Ben Zorn
18:00 <i>Dinner</i>		
19:30 <i>onwards</i>	Something nice for the last evening?	

Friday, Oct. 30 Wrapping up

09:00-10:15	Presentation of Results of Discussion Groups	Org: Ben Zorn
	Focus: Benchmark Problems	
<i>10:15-10:30 Coffee Break</i>		
10:15-12:00	Wrapping up	