

PLP-2015: The Second Workshop on Probabilistic Logic Programming

A workshop of the 2015 International Conference on Logic Programming  
31 August 2015  
Cork, Ireland  
<http://stoics.org.uk/plp/plp2015/>

Deadline for submissions: 10 June 2015

Overview

Probabilistic logic programming (PLP) approaches have received much attention in this century. They address the need to reason about relational domains under uncertainty arising in a variety of application domains, such as bioinformatics, the semantic web, robotics, and many more. Developments in PLP include new languages that combine logic programming with probability theory, as well as algorithms that operate over programs in these formalisms.

PLP is part of a wider current interest in probabilistic programming. By promoting probabilities as explicit programming constructs, inference, parameter estimation and learning algorithms can be ran over programs which represent highly structured probability spaces. Due to logic programming's strong theoretical underpinnings, PLP is one of the more disciplined areas of probabilistic programming. It builds upon and benefits from the large body of existing work in logic programming, both in semantics and implementation, but also presents new challenges to the field. PLP reasoning often requires the evaluation of large number of possible states before any answers can be produced thus braking the sequential search model of traditional logic programs.

While PLP has already contributed a number of formalisms, systems and well understood and established results in: parameter estimation, tabling, marginal probabilities and Bayesian learning, many questions remain open in this exciting, expanding field in the intersection of AI, machine learning and statistics.

This workshop provides a forum for the exchange of ideas, presentation of results and preliminary work, in the following areas

- \* probabilistic logic programming formalisms
- \* parameter estimation
- \* statistical inference
- \* implementations
- \* structure learning
- \* reasoning with uncertainty
- \* constraint store approaches
- \* stochastic and randomised algorithms
- \* probabilistic knowledge representation and reasoning
- \* constraints in statistical inference
- \* applications, such as
  - \* \* bioinformatics
  - \* \* semantic web
  - \* \* robotics
- \* probabilistic graphical models
- \* Bayesian learning
- \* tabling for learning and stochastic inference
- \* MCMC
- \* stochastic search
- \* labelled logic programs
- \* integration of statistical software

The above list should be interpreted broadly and is by no means exhaustive.

#### Purpose

-----  
After a successful first edition of this workshop at ICLP 2014 in Vienna, the second edition hopes to continue to foster collaboration between the ICLP and PLP communities. We hope that both (a) more LP researchers will become interested in inference and learning with PLP and (b) PLP researchers will get important feedback on their work from logic programmers.

#### Submissions

-----  
Submissions will be managed via EasyChair. Contributions should be prepared in the LLNCS style. A mixture of papers are sought including: new results, work in progress as well as technical summaries of recent substantial contributions. Papers presenting new results should be 6-12 pages in length. Work in progress and technical summaries can be shorter. The workshop proceedings will clearly indicate the type of each paper.

At least one author of each accepted paper will be required to attend the workshop to present the contribution.

#### Publication

-----  
Informal proceedings will be made available electronically to attendees. They will also be stored permanently in the form on CEUR Workshop Proceedings (<http://ceur-ws.org/>). The proceedings will consist of clearly marked sections corresponding to the different types of submissions accepted.

Extended versions of selected workshop papers will be published in the International Journal of Approximate Reasoning (Elsevier).

#### Deadlines

-----  
Papers due: Wed, 10th June 2015  
Notification to authors: Fri, 10th July 2015  
Camera ready version due: Fri, 24th July 2015  
Workshop data: Mon, 31st August 2015

(the deadline for all dates is 23:59 BST)

#### Invited Speaker(s)

-----  
To be announced

#### Programme Committee

-----  
Fabrizio Riguzzi (Università di Ferrara, Italy) [co-chair]  
Joost Vennekens (KU Leuven, Belgium) [co-chair]  
Elena Bellodi (ENDIF-University of Ferrara)  
Nicos Angelopoulos (Imperial College, London)  
Arjen Hommersom (University of Nijmegen)  
Nicola Di Mauro (Università di Bari)  
Christian Theil Have (Copenhagen University)  
Angelika Kimmig (KU Leuven)  
Wannes Meert (KU Leuven)  
Aline Paes (Institute of Computing, Universidade Federal Fluminense)  
David Poole (University of British Columbia)  
C. R. Ramakrishnan (University at Stony Brook)  
Herbert Wiklicky (Imperial College London)  
Terrance Swift (CENTRIA, Universidade Nova de Lisboa)  
James Cussens (University of York)