

Table of Contents

Invited Talks

Partial Completeness of Abstract Fixpoint Checking	1
<i>Patrick Cousot (École normale supérieure)</i>	
An Overview of MAXQ Hierarchical Reinforcement Learning	26
<i>Thomas G. Dietterich (Oregon State University)</i>	
Recent Progress in the Design and Analysis of Admissible Heuristic Functions	45
<i>Richard E. Korf (University of California, Los Angeles)</i>	

Tutorial

GIS Databases: From Multiscale to MultiRepresentation	57
<i>Stefano Spaccapietra (Swiss Federal Institute of Technology in Lausanne), Christine Parent (University of Lausanne), Christelle Vangenot (Swiss Federal Institute of Technology in Lausanne)</i>	

Full Papers

An Abstraction Framework for Soft Constraints and Its Relationship with Constraint Propagation	71
<i>Stefano Bistarelli (Università di Pisa), Philippe Codognet (Université Paris VI), Francesca Rossi (Università di Padova)</i>	
Abstractions for Knowledge Organization of Relational Descriptions	87
<i>Isabelle Bournaud (Université Paris-Sud), Mélanie Courtine, Jean-Daniel Zucker (Université Paris VI)</i>	
Grid-Based Histogram Arithmetic for the Probabilistic Analysis of Functions	107
<i>Carlos Carreras, Manuel V. Hermenegildo (Technical University of Madrid)</i>	
Approximating Data in Constraint Databases	124
<i>Rui Chen, Min Ouyang, Peter Z. Revesz (University of Nebraska-Lincoln)</i>	
Linearly Bounded Reformulations of Unary Databases	144
<i>Rada Chirkova, Michael R. Genesereth (Stanford University)</i>	

A CSP Abstraction Framework 164
*Christophe Lecoutre, Sylvain Merchez, Frédéric Boussemart,
Eric Grégoire (Université d'Artois)*

Interactions of Abstractions in Programming 185
Gordon S. Novak Jr. (University of Texas at Austin)

Reformulation and Approximation in Model Checking 202
Peter Z. Revesz (University of Nebraska-Lincoln)

The Lumberjack Algorithm for Learning Linked Decision Forests 219
William T.B. Uther, Manuela M. Veloso (Carnegie Mellon University)

Reformulating Propositional Satisfiability as Constraint Satisfaction 233
Toby Walsh (University of York)

Extended Abstracts

Improving the Efficiency of Reasoning Through Structure-Based
Reformulation 247
Eyal Amir, Sheila McIlraith (Stanford University)

Using Feature Hierarchies in Bayesian Network Learning 260
*Marie desJardins (SRI International), Lise Getoor, Daphne Koller
(Stanford University)*

On Reformulating Planning as Dynamic Constraint Satisfaction 271
*Jeremy Frank, Ari K. Jónsson, Paul Morris (NASA Ames
Research Center)*

Experiments with Automatically Created Memory-Based Heuristics 281
István T. Hernádvölgyi, Robert C. Holte (University of Ottawa)

Abstraction and Phase Transitions in Relational Learning 291
*Lorenza Saïtta (Università del Piemonte Orientale), Jean-Daniel Zucker
(Université Paris VI)*

Posters

An Agent-Based Approach to Robust Switching Between Abstraction
Levels for Fault Diagnosis 303
*Terrence P. Fries (Coastal Carolina University), James H. Graham
(University of Louisville)*

A Compositional Approach to Causality 309
T.K. Satish Kumar (Stanford University)

A Method for Finding Consistent Hypotheses Using Abstraction 313
*Yoshiaki Okubo, Makoto Haraguchi, Yan Fang Zheng (Hokkaido
University)*

Research Summaries

Program Synthesis and Transformation Techniques for Simulation, Optimization, and Constraint Satisfaction	317
<i>Thomas Ellman (Vassar College)</i>	
Using and Learning Abstraction Hierarchies for Planning	320
<i>David Furcy (Georgia Institute of Technology)</i>	
Learning Probabilistic Relational Models	322
<i>Lise Getoor (Stanford University)</i>	
Synergy between Compositional Modeling and Bayesian Networks	324
<i>T.K. Satish Kumar (Stanford University)</i>	
A CSP Abstraction Framework	326
<i>Christophe Lecoutre, Sylvain Merchez, Frédéric Boussemart, Eric Grégoire (Université d'Artois)</i>	
Answering Queries with Database Restrictions	328
<i>Chen Li (Stanford University)</i>	
Research Summary	330
<i>Gordon S. Novak Jr. (University of Texas at Austin)</i>	
Author Index	333