

Invited Keynote Presentations

Preferences, Planning and Control / 2
Ronen I. Brafman

Beyond Nash Equilibrium: Solution Concepts for the 21st Century / 6
Joseph Y. Halpern

Agents and Multiagent Systems

Reasoning about Agent Deliberation / 16
Natasha Alechina, Mehdi Dastani, Brian S. Logan, John-Jules Ch. Meyer

A Logical Framework to Represent and Reason about Graded Preferences and Intentions / 27
Ana Casali, Lluís Godo, Carles Sierra

A Logical Account of Institutions: From Acceptances to Norms via Legislators / 38
Emiliano Lorini, Dominique Longin

Dynamic Logic on Games with Structured Strategies / 49
R. Ramanujam, Sunil Easaw Simon

Promises Kept, Promises Broken: An Axiomatic and Quantitative Treatment of Fulfillment / 59
Gerardo I. Simari, Matthias Broecheler, V.S. Subrahmanian, Sarit Kraus

Approximate Reasoning / Query Answering

Taming the Infinite Chase: Query Answering under Expressive Relational Constraints / 70
Andrea Cali, Georg Gottlob, Michael Kifer

Accuracy and Efficiency of Fixpoint Methods for Approximate Query Answering in Locally Complete Databases / 81
Álvaro Cortés-Calabuig, Marc Denecker, Ofer Arieli, Maurice Bruynooghe

Injecting the How into the What: Investigating a Finite Classical Logic / 92
Timothy L. Hinrichs, Michael R. Genesereth

Approximate Reasoning in First-Order Logic Theories / 103
Johan Wittocx, Maarten Mariën, Marc Denecker

Argumentation

Making Decisions through Preference-Based Argumentation / 113
Leila Amgoud, Yannis Dimopoulos, Pavlos Moraitis

Revision of an Argumentation System / 124
Claudette Cayrol, Florence Dupin de Saint-Cyr, Marie-Christine Lagasquie-Schiex

An Abstract Argumentation Framework with Varied-Strength Attacks / 135
Diego C. Martínez, Alejandro J. García, Guillermo R. Simari

Belief Change

Equilibria in Social Belief Removal / 145
Richard Booth, Thomas Meyer

Horn Clause Belief Change: Contraction Functions / 156
James P. Delgrande

Linking Iterated Belief Change Operations to Nonmonotonic Reasoning / 166
Gabriele Kern-Isberner

Improvement Operators / 177
Sébastien Konieczny, Ramón Pino Pérez

Causal Reasoning

Scenario Update Applied to Causal Reasoning / 188
Florence Dupin de Saint-Cyr

Defaults and Normality in Causal Structures / 198
Joseph Y. Halpern

On Notions of Causality and Distributed Knowledge / 209
Ron van der Meyden

Description Logics / Ontologies

Complexity of Abduction in the EL Family of Lightweight Description Logics / 220
Meghyn Bienvenu

Path-Based Identification Constraints in Description Logics / 231
Diego Calvanese, Giuseppe De Giacomo, Domenico Lembo, Maurizio Lenzerini, Riccardo Rosati

View-Based Query Answering over Description Logic Ontologies / 242
Diego Calvanese, Giuseppe De Giacomo, Maurizio Lenzerini, Riccardo Rosati

Unions of Conjunctive Queries in SHOQ / 252
Birte Glimm, Ian Horrocks, Ulrike Sattler

Model-Theoretic Characterization of Asher and Vieu's Ontology of Mereotopology / 263
Torsten Hahmann, Michael Gruninger

RIQ and SROIQ Are Harder than SHOIQ / 274
Yevgeny Kazakov

Can You Tell the Difference Between DL-Lite Ontologies? / 285
Roman Kontchakov, Frank Wolter, Michael Zakharyashev

Representing Structured Objects using Description Graphs / 296
Boris Motik, Bernardo Cuenca Grau, Ian Horrocks, Ulrike Sattler

How Many Toes Do I Have? Parthood and Number Restrictions in Description Logics / 307
Lutz Schröder, Dirk Pattinson

Ontology Generation through the Fusion of Partial Reuse and Relation Extraction / 318
Nwe Ni Tun, Jin Song Dong

Inconsistency Handling

Peer-to-Peer Query Answering with Inconsistent Knowledge / 329
Arnold Binas, Sheila A. McIlraith

How to Choose Weightings to Avoid Collisions in a Restricted Penalty Logic / 340
Nathalie Chetcuti-Sperandio, Sylvain Lagrue

Conflict-Based Merging Operators / 348
Patricia Everaere, Sébastien Konieczny, Pierre Marquis

Measuring Inconsistency through Minimal Inconsistent Sets / 358
Anthony Hunter, Sébastien Konieczny

Inconsistency Management Policies / 367
Maria Vanina Martinez, Francesco Parisi, Andrea Pugliese, Gerardo I. Simari, V. S. Subrahmanian

KR and Machine Learning

A First Experimental Demonstration of Massive Knowledge Infusion / 378
Loizos Michael, Leslie G. Valiant

Logic Programming / Answer Sets

A Principled Framework for Modular Web Rule Bases and Its Semantics / 390
Anastasia Analyti, Grigoris Antoniou, Carlos Viegas Damásio

Computing Loops with at Most One External Support Rule / 401
Xiaoping Chen, Jianmin Ji, Fangzhen Lin

Belief Revision of Logic Programs under Answer Set Semantics / 411
James Delgrande, Torsten Schaub, Hans Tompits, Stefan Woltran

Conflict-Driven Disjunctive Answer Set Solving / 422
Christian Drescher, Martin Gebser, Torsten Grote, Benjamin Kaufmann, Arne König, Max Ostrowski, Torsten Schaub

Notions of Strong Equivalence for Logic Programs with Ordered Disjunction / 433
Wolfgang Faber, Hans Tompits, Stefan Woltran

On Loop Formulas with Variables / 444
Joohyung Lee, Yunsong Meng

Answer Set Programming with Functions / 454
Fangzhen Lin, Yisong Wang

Nonmonotonic Reasoning

Default Theory of Defeasible Entailment / 466

Alexander Bochman

Semantic Preferential Subsumption / 476

Katarina Britz, Johannes Heidema, Thomas Meyer

Embedding Approaches to Combining Rules and Ontologies into Autoepistemic Logic / 485

Jos de Bruijn, Thomas Eiter, Hans Tompits

Computing Default Extensions by Reductions on O^R / 496

Espen H. Lian, Arild Waaler

A Lexicographic Inference for Partially Preordered Belief Bases / 507

Safa Yahi, Salem Benferhat, Sylvain Lagrue, Mariette S  rayet, Odile Papini

Planning

On the Complexity of Planning Operator Subsumption / 518

Patrick Eyerich, Michael Brenner, Bernhard Nebel

Deductive Planning with Inductive Loops / 528

Martin Magnusson, Patrick Doherty

Planning Graphs and Propositional Clause-Learning / 535

Jussi Rintanen

On the Relative Expressiveness of ADL and Golog: The Last Piece in the Puzzle / 544

Gabriele R  ger, Malte Helmert, Bernhard Nebel

Preferences

Relational Preference Rules for Control / 552

Ronen I. Brafman

Reasoning with Qualitative Preferences and Cardinalities using Generalized Circumscription / 560

Patrick Doherty, Andrzej Szalas

Dealing with Incomplete Agents' Preferences and an Uncertain Agenda in Group Decision Making via Sequential Majority Voting / 571

Maria Silvia Pini, Francesca Rossi, Kristen Brent Venable, Toby Walsh

Preference Modeling by Weighted Goals with Max Aggregation / 579

Joel Uckelman, Ulle Endriss

Reasoning about Action

A Logic for Non-Terminating Golog Programs / 589
Jens Classen, Gerhard Lakemeyer

ConGolog, Sin Trans: Compiling ConGolog into Basic Action Theories for Planning and Beyond / 600
Christian Fritz, Jorge A. Baier, Sheila A. McIlraith

Complex Epistemic Modalities in the Situation Calculus / 611
Ryan F. Kelly, Adrian R. Pearce

Proving Goal Achievability / 621
Fangzhen Lin

Cartesian Situations and Knowledge Decomposition in the Situation Calculus / 629
Ronald P. A. Petrick

Behavior Composition in the Presence of Failure / 640
Sebastian Sardina, Fabio Patrizi, Giuseppe De Giacomo

Action Theory Contraction and Minimal Change / 651
Ivan José Varzinczak

First-Order Strong Progression for Local-Effect Basic Action Theories / 662
Stavros Vassos, Gerhard Lakemeyer, Hector J. Levesque

Temporal and Spatial Reasoning

Formalising Temporal Constraints on Part-Whole Relations / 673
Alessandro Artale, Nicola Guarino, C. Maria Keet

LTL over Description Logic Axioms / 684
Franz Baader, Silvio Ghilardi, Carsten Lutz

Time Representation and Temporal Reasoning from the Perspective of Non-Standard Analysis / 695
Philippe Balbiani

A Complete First-Order Logic of Knowledge and Time / 705
Francesco Belardinelli, Alessio Lomuscio

Automated Complexity Proofs for Qualitative Spatial and Temporal Calculi / 715
Jochen Renz, Jason Jingshi Li

Identifying Objects Over Time with Description Logics / 724
David Toman, Grant Weddell

Index / 733