Contents

Analogical Reasoning

Analogical Inequalities. ......................................................... 3
   Henri Prade and Gilles Richard

Boolean Analogical Proportions - Axiomatics and Algorithmic
Complexity Issues. .............................................................. 10
   Henri Prade and Gilles Richard

Argumentation

Evaluation of Arguments in Weighted Bipolar Graphs. .............. 25
   Leila Amgoud and Jonathan Ben-Naim

Debate-Based Learning Game for Constructing Mathematical Proofs. . . 36
   Nadira Boudjani, Abdelkader Gouaich, and Souhila Kaci

Updating Probabilistic Epistemic States in Persuasion Dialogues. . . . 46
   Anthony Hunter and Nico Potyka

From Structured to Abstract Argumentation: Assumption-Based
Acceptance via AF Reasoning .................................................. 57
   Tuomo Lehtonen, Johannes P. Wallner, and Matti Järvisalo

On Relating Abstract and Structured Probabilistic Argumentation:
A Case Study ................................................................. 69
   Henry Prakken

Bayesian Networks

Structure-Based Categorisation of Bayesian Network Parameters. . . 83
   Janneke H. Bolt and Silja Renooij

The Descriptive Complexity of Bayesian Network Specifications . . . 93
   Fabio G. Cozman and Denis D. Mauá

Exploiting Stability for Compact Representation of Independency Models . . 104
   Linda C. van der Gaag and Stavros Lopatatzidis

Parameter Learning Algorithms for Continuous Model Improvement
Using Operational Data ............................................................. 115
   Anders L. Madsen, Nicolaj Søndberg Jeppesen, Frank Jensen,
   Mohamed S. Sayed, Ulrich Moser, Luis Neto, Joao Reis, and Niels Lohse
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monotonicity in Bayesian Networks for Computerized Adaptive Testing</td>
<td>125</td>
</tr>
<tr>
<td>Martin Plajner and Jiří Vomlel</td>
<td></td>
</tr>
<tr>
<td>Expert Opinion Extraction from a Biomedical Database</td>
<td>135</td>
</tr>
<tr>
<td>Ahmed Samet, Thomas Guyet, Benjamin Negrevergne, Tien-Tuan Dao,</td>
<td></td>
</tr>
<tr>
<td>Tuan Nha Hoang, and Marie Christine Ho Ba Tho</td>
<td></td>
</tr>
<tr>
<td>Solving Trajectory Optimization Problems by Influence Diagrams</td>
<td>146</td>
</tr>
<tr>
<td>Jiří Vomlel and Václav Kratochvíl</td>
<td></td>
</tr>
</tbody>
</table>

**Belief Functions**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iterative Aggregation of Crowdsourced Tasks Within the Belief</td>
<td>159</td>
</tr>
<tr>
<td>Function Theory</td>
<td></td>
</tr>
<tr>
<td>Lina Abassi and Imen Boukhris</td>
<td></td>
</tr>
<tr>
<td>A Clustering Approach for Collaborative Filtering Under the Belief</td>
<td>169</td>
</tr>
<tr>
<td>Function Framework</td>
<td></td>
</tr>
<tr>
<td>Raoua Abdelkhalek, Imen Boukhris, and Zied Elouedi</td>
<td></td>
</tr>
<tr>
<td>A Generic Framework to Include Belief Functions in Preference Handling for Multi-criteria Decision</td>
<td>179</td>
</tr>
<tr>
<td>Sébastien Destercke</td>
<td></td>
</tr>
<tr>
<td>A Recourse Approach for the Capacitated Vehicle Routing Problem with Evidential Demands</td>
<td>190</td>
</tr>
<tr>
<td>Nathalie Helal, Frédéric Pichon, Daniel Porumbel, David Mercier,</td>
<td></td>
</tr>
<tr>
<td>and Éric Lefèvre</td>
<td></td>
</tr>
<tr>
<td>Evidential k-NN for Link Prediction</td>
<td>201</td>
</tr>
<tr>
<td>Sabrine Mallek, Imen Boukhris, Zied Elouedi, and Eric Lefevre</td>
<td></td>
</tr>
<tr>
<td>Ensemble Enhanced Evidential k-NN Classifier Through Random Subspaces</td>
<td>212</td>
</tr>
<tr>
<td>Asma Trabelsi, Zied Elouedi, and Eric Lefevre</td>
<td></td>
</tr>
</tbody>
</table>

**Conditionals**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison of Inference Relations Defined over Different Sets of Ranking Functions</td>
<td>225</td>
</tr>
<tr>
<td>Christoph Beierle and Steven Kutsch</td>
<td></td>
</tr>
<tr>
<td>A Transformation System for Unique Minimal Normal Forms of Conditional Knowledge Bases</td>
<td>236</td>
</tr>
<tr>
<td>Christoph Beierle, Christian Eichhorn, and Gabriele Kern-Isberner</td>
<td></td>
</tr>
<tr>
<td>On Boolean Algebras of Conditionals and Their Logical Counterpart</td>
<td>246</td>
</tr>
<tr>
<td>Tommaso Flaminio, Lluis Godo, and Hykel Hosni</td>
<td></td>
</tr>
</tbody>
</table>
A Semantics for Conditionals with Default Negation ................................. 257

Marco Wilhelm, Christian Eichhorn, Richard Niland, and Gabriele Kern-Isberner

Credal Sets, Credal Networks

Incoherence Correction and Decision Making Based on Generalized
Credal Sets ............................................................... 271

Andrey G. Bronevich and Igor N. Rozenberg

Reliable Knowledge-Based Adaptive Tests by Credal Networks ................. 282

Francesca Mangili, Claudio Bonesana, and Alessandro Antonucci

Decision Theory, Decision Making and Reasoning Under Uncertainty

Algorithms for Multi-criteria Optimization in Possibilistic Decision Trees ... 295

Nahla Ben Amor, Fatma Essghaier, and Hélène Fargier

Efficient Policies for Stationary Possibilistic Markov Decision Processes ... 306

Nahla Ben Amor, Zeineb EL khalfi, Hélène Fargier, and Régis Sabaddin

An Angel-Daemon Approach to Assess the Uncertainty in the Power
of a Collectivity to Act .................................................. 318

Giulia Fragnito, Joaquim Gabarro, and Maria Serna

Decision Theory Meets Linear Optimization Beyond Computation .......... 329

Christoph Jansen, Thomas Augustin, and Georg Schollmeyer

Axiomatization of an Importance Index for Generalized Additive
Independence Models .................................................... 340

Mustapha Ridaoui, Michel Grabisch, and Christophe Labreuche

Fuzzy Sets, Fuzzy Logic

Probability Measures in Gödel, A Logic .............................................. 353

Stefano Aguzzoli, Matteo Bianchi, Brunella Gerla, and Diego Valota

Fuzzy Weighted Attribute Combinations Based Similarity Measures ....... 364

Giulianella Coletti, Davide Petturiti, and Barbara Vantaggi

Online Fuzzy Temporal Operators for Complex System Monitoring ........ 375

Jean-Philippe Poli, Laurence Boudet, Bruno Espinosa, and Laurence Cornez
Logics

Complexity of Model Checking for Cardinality-Based Belief Revision Operators ........................................ 387
Nadia Creignou, Raïda Ktari, and Odile Papini

A Two-Tiered Propositional Framework for Handling Multisource Inconsistent Information .......................... 398
Davide Ciucci and Didier Dubois

Reasoning in Description Logics with Typicalities and Probabilities of Exceptions ..................................... 409
Gian Luca Pozzato

Orthopairs

Measuring Uncertainty in Orthopairs ........................................ 423
Andrea Campagner and Davide Ciucci

Possibilistic Networks

Possibilistic MDL: A New Possibilistic Likelihood Based Score Function for Imprecise Data ...................... 435
Maroua Haddad, Philippe Leray, and Nahla Ben Amor

Probabilistic Logics, Probabilistic Reasoning

The Complexity of Inferences and Explanations in Probabilistic Logic Programming .................................. 449
Fabio G. Cozman and Denis D. Mauá

Count Queries in Probabilistic Spatio-Temporal Knowledge Bases with Capacity Constraints .................... 459
John Grant, Cristian Molinaro, and Francesco Parisi

RankPL: A Qualitative Probabilistic Programming Language .......................................................... 470
Tjitze Rienstra

Generalized Probabilistic Modus Ponens ....................................... 480
Giuseppe Sanfilippo, Niki Pfeifer, and Angelo Gilio

A First-Order Logic for Reasoning About Higher-Order Upper and Lower Probabilities .......................... 491
Nenad Savić, Dragan Doder, and Zoran Ognjanović

Author Index ........................................................................ 501
Symbolic and Quantitative Approaches to Reasoning with Uncertainty
14th European Conference, ECSQARU 2017, Lugano, Switzerland, July 10-14, 2017, Proceedings
Antonucci, A.; Cholvy, L.; Papini, O. (Eds.)
2017, XXII, 502 p. 59 illus., Softcover
ISBN: 978-3-319-61580-6