

# Contents

## Optimization and Evolutionary Algorithms

Understanding Characteristics of Evolved Instances for State-of-the-Art Inexact TSP Solvers with Maximum Performance Difference . . . . .	3
<i>Jakob Bossek and Heike Trautmann</i>	
On-line Dynamic Station Redeployments in Bike-Sharing Systems . . . . .	13
<i>Carlo Manna</i>	
Optimized Word-Size Time Series Representation Method Using a Genetic Algorithm with a Flexible Encoding Scheme . . . . .	26
<i>Muhammad Marwan Muhammad Fuad</i>	
Efficient Search of Relevant Structures in Complex Systems . . . . .	35
<i>Laura Sani, Michele Amoretti, Emilio Vicari, Monica Mordonini, Riccardo Pecori, Andrea Roli, Marco Villani, Stefano Cagnoni, and Roberto Serra</i>	

## Classification, Pattern Recognition, and Computer Vision

Flat and Hierarchical Classifiers for Detecting Emotion in Tweets . . . . .	51
<i>Giulio Angiani, Stefano Cagnoni, Natalia Chuzhikova, Paolo Fornacciari, Monica Mordonini, and Michele Tomaiuolo</i>	
Spam Filtering Using Regularized Neural Networks with Rectified Linear Units . . . . .	65
<i>Aliaksandr Barushka and Petr Hájek</i>	
User Mood Tracking for Opinion Analysis on Twitter . . . . .	76
<i>Giuseppe Castellucci, Danilo Croce, Diego De Cao, and Roberto Basili</i>	
Using Random Forests for the Estimation of Multiple Users' Visual Focus of Attention from Head Pose. . . . .	89
<i>Silvia Rossi, Enrico Leone, and Mariacarla Staffa</i>	

## Multi-agent Systems

An Analytic Study of Opinion Dynamics in Multi-agent Systems with Additive Random Noise . . . . .	105
<i>Stefania Monica and Federico Bergenti</i>	

Combining Avoidance and Imitation to Improve Multi-agent Pedestrian Simulation . . . . .	118
<i>Luca Crociani, Giuseppe Vizzari, and Stefania Bandini</i>	

**Knowledge Representation and Reasoning**

Educational Concept Maps for Personalized Learning Path Generation. . . . .	135
<i>Giovanni Adorni and Frosina Koceva</i>	

Answer Set Enumeration via Assumption Literals . . . . .	149
<i>Mario Alviano and Carmine Dodaro</i>	

On the Application of Answer Set Programming to the Conference Paper Assignment Problem. . . . .	164
<i>Giovanni Amendola, Carmine Dodaro, Nicola Leone, and Francesco Ricca</i>	

A Subdivision Approach to the Solution of Polynomial Constraints over Finite Domains Using the Modified Bernstein Form. . . . .	179
<i>Federico Bergenti, Stefania Monica, and Gianfranco Rossi</i>	

$\mathcal{I}$ -DLV: The New Intelligent Grounder of DLV . . . . .	192
<i>Francesco Calimeri, Davide Fuscà, Simona Perri, and Jessica Zangari</i>	

Abducting Compliance of Incomplete Event Logs . . . . .	208
<i>Federico Chesani, Riccardo De Masellis, Chiara Di Francescomarino, Chiara Ghidini, Paola Mello, Marco Montali, and Sergio Tessaris</i>	

Boosting the Development of ASP-Based Applications in Mobile and General Scenarios . . . . .	223
<i>Francesco Calimeri, Davide Fuscà, Stefano Germano, Simona Perri, and Jessica Zangari</i>	

Relationships and Events: Towards a General Theory of Reification and Truthmaking. . . . .	237
<i>Nicola Guarino and Giancarlo Guizzardi</i>	

A Self-Adaptive Context-Aware Group Recommender System . . . . .	250
<i>Reza Khoshkangini, Maria Silvia Pini, and Francesca Rossi</i>	

A Model+Solver Approach to Concept Learning. . . . .	266
<i>Francesca Alessandra Lisi</i>	

**Machine Learning**

A Comparative Study of Inductive and Transductive Learning with Feedforward Neural Networks . . . . .	283
<i>Monica Bianchini, Anas Belahcen, and Franco Scarselli</i>	

Structural Knowledge Extraction from Mobility Data. . . . .	294
<i>Pietro Cottone, Salvatore Gaglio, Giuseppe Lo Re, Marco Ortolani, and Gabriele Pergola</i>	
Predicting Process Behavior in WoMan . . . . .	308
<i>Stefano Ferilli, Floriana Esposito, Domenico Redavid, and Sergio Angelastro</i>	
On-line Learning on Temporal Manifolds. . . . .	321
<i>Marco Maggini and Alessandro Rossi</i>	
Learning and Reasoning with Logic Tensor Networks . . . . .	334
<i>Luciano Serafini and Artur S. d'Avila Garcez</i>	

### **Semantic Web and Description Logics**

Probabilistic Logical Inference on the Web. . . . .	351
<i>Marco Alberti, Giuseppe Cota, Fabrizio Riguzzi, and Riccardo Zese</i>	
Probabilistic Hybrid Knowledge Bases Under the Distribution Semantics. . . .	364
<i>Marco Alberti, Evelina Lamma, Fabrizio Riguzzi, and Riccardo Zese</i>	
Context-Awareness for Multi-sensor Data Fusion in Smart Environments. . . .	377
<i>Alessandra De Paola, Pierluca Ferraro, Salvatore Gaglio, and Giuseppe Lo Re</i>	
Reasoning about Multiple Aspects in Rational Closure for DLs . . . . .	392
<i>Valentina Gliozzi</i>	
A Framework for Automatic Population of Ontology-Based Digital Libraries . . . . .	406
<i>Laura Pandolfo, Luca Pulina, and Giovanni Adorni</i>	
Reasoning About Surprising Scenarios in Description Logics of Typicality. . .	418
<i>Gian Luca Pozzato</i>	

### **Natural Language Processing**

A Resource-Driven Approach for Anchoring Linguistic Resources to Conceptual Spaces. . . . .	435
<i>Antonio Lieto, Enrico Mensa, and Daniele P. Radicioni</i>	
Analysis of the Impact of Machine Translation Evaluation Metrics for Semantic Textual Similarity. . . . .	450
<i>Simone Magnolini, Ngoc Phuoc An Vo, and Octavian Popescu</i>	

QuASIt: A Cognitive Inspired Approach to Question Answering for the Italian Language. . . . .	464
<i>Arianna Pipitone, Giuseppe Tirone, and Roberto Pirrone</i>	
Spoken Language Understanding for Service Robotics in Italian . . . . .	477
<i>Andrea Vanzo, Danilo Croce, Giuseppe Castellucci, Roberto Basili, and Daniele Nardi</i>	
<b>Planning and Scheduling</b>	
DARDIS: Distributed And Randomized Dispatching and Scheduling. . . . .	493
<i>Thomas Bridi, Michele Lombardi, Andrea Bartolini, Luca Benini, and Michela Milano</i>	
Steps in Assessing a Timeline-Based Planner . . . . .	508
<i>Alessandro Umbrico, Amedeo Cesta, Marta Cialdea Mayer, and Andrea Orlandini</i>	
<b>Formal Verification</b>	
Learning for Verification in Embedded Systems: A Case Study . . . . .	525
<i>Ali Khalili, Massimo Narizzano, and Armando Tacchella</i>	
Learning in Physical Domains: Mating Safety Requirements and Costly Sampling . . . . .	539
<i>Francesco Leofante and Armando Tacchella</i>	
<b>Author Index</b> . . . . .	553

AI\*IA 2016 Advances in Artificial Intelligence  
XVth International Conference of the Italian Association  
for Artificial Intelligence, Genova, Italy, November 29 -  
December 1, 2016, Proceedings  
Adorni, G.; Cagnoni, S.; Gori, M.; Maratea, M. (Eds.)  
2016, XIV, 554 p. 86 illus., Softcover  
ISBN: 978-3-319-49129-5