

15th International Conference on Agents and Artificial Intelligence (ICAART 2023)

Volume 1

Lisbon, Portugal
22-24 February 2023

Editors:

Ana Paula Rocha
Luc Steels
Jaap van den Herik

ISBN: 978-1-7138-7656-4

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2023) by SCITEPRESS – Science and Technology Publications, Lda.
All rights reserved.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact SCITEPRESS – Science and Technology Publications, Lda.
at the address below.

SCITEPRESS – Science and Technology Publications, Lda.
Avenida de S. Francisco Xavier, Lote 7 Cv. C,
2900-616 Setúbal, Portugal

Phone: +351 265 520 185

Fax: +351 265520 186

info@scitepress.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS

Quantum Annealing for Constraint Satisfaction and Constrained Optimization <i>Philippe Codognet</i>	5
AI and Music with Knowledge Graphs <i>Valentina Presutti</i>	7
MarIA: Spanish Language Models <i>Marta Villegas</i>	9
Outracing Champion Gran Turismo Drivers with Deep Reinforcement Learning <i>Michael Spranger</i>	11

AGENTS

FULL PAPERS

Dynamic Task Graphs for Teams in Collaborative Assembly Processes <i>Ana Macedo, Liliana Antão, João Reis and Gil Gonçalves</i>	17
Teleo-Reactive Agents in a Simulation Platform <i>Vasileios Apostolidis-Afentoulis and Ilias Sakellariou</i>	26
Autonomous Energy-Saving Behaviors with Fulfilling Requirements for Multi-Agent Cooperative Patrolling Problem <i>Kohei Matsumoto, Keisuke Yoneda and Toshiharu Sugawara</i>	37
SNAPE: A Sequential Non-Stationary Decision Process Model for Adaptive Explanation Generation <i>Amelie Sophie Robrecht and Stefan Kopp</i>	48
Bottom-Up Bio-Inspired Algorithms for Optimizing Industrial Plants <i>M. Umlauft, M. Gojkovic, K. Harshina and M. Schranz</i>	59
Fast Heuristic for Ricochet Robots <i>Jan Hůla, David Adamczyk and Mikoláš Janota</i>	71
Studying the Impact of Transportation During Lockdown on the Spread of COVID-19 Using Agent-Based Modeling <i>Shikha Bhat, Ruturaj Godse, Shruti Mestry and Vinayak Naik</i>	80
Swapping Physical Resources at Runtime in Embedded MultiAgent Systems <i>Nilson Mori Lazarin, Carlos Eduardo Pantoja and José Viterbo</i>	93
How to Find Good Coalitions to Achieve Strategic Objectives <i>Angelo Ferrando and Vadim Malvone</i>	105
Reciprocal Adaptation Measures for Human-Agent Interaction Evaluation <i>Jiyeon Woo, Catherine Pelachaud and Catherine Achard</i>	114

A Holonic Multi-Agent Architecture For Smart Grids <i>Ihab Taleb, Guillaume Guerard, Frédéric Fauberteau and Nga Nguyen</i>	126
Differential Weight and Population Size of PRDE Traders: An Analysis of Their Impact on Market Dynamics <i>George Herbert</i>	135
SHORT PAPERS	
Implicit Cooperative Learning on Distribution of Received Reward in Multi-Agent System <i>Fumito Uwano</i>	147
Online HTN Planning for Data Transfer and Utilization Considering Legal and Ethical Norms: Case Study <i>Hisashi Hayashi and Ken Satoh</i>	154
Cross-Paradigm Interoperability Between Jadescript and Java <i>Giuseppe Petrosino, Stefania Monica and Federico Bergenti</i>	165
Operational Semantic of an AgentSpeak(L) Interpreter Using Late Bindings <i>Frantisek Vidensky, Frantisek Zboril, Radek Koci and Frantisek V. Zboril</i>	173
Analyzing the Effectiveness of Stereotypes <i>Nanda Kishore Sreenivas and Robin Cohen</i>	181
Virtual Agent Behavior Modeling in Case of a Risky Situation in a Virtual Electrical Substation <i>Dilyana Budakova, Velyo Vasilev, Lyudmil Dakovski and Stanimir Stefanov</i>	189
Multi-Agent Pathfinding on Large Maps Using Graph Pruning: This Way or That Way? <i>Jiří Švancara, Philipp Obermeier, Matej Husár, Roman Barták and Torsten Schaub</i>	199
Logic of Awareness in Agent's Reasoning <i>Yudai Kubono, Teeradaj Racharak and Satoshi Tojo</i>	207
Ontology-Based Solution for Building an Intelligent Searching System on Traffic Law Documents <i>Vuong T. Pham, Hien D. Nguyen, Thinh Le, Binh Nguyen and Hung Q. Ngo</i>	217
Wall Climbing Emergent Behavior in a Swarm of Real-World Miniature Autonomous Blimps <i>Tristan K. Schuler, Cameron Kabacinski, Daniel M. Lofaro, Dhawal Bhandari, Jennifer Nguyen and Donald Sofge</i>	225
A Novel Group-Based Firefly Algorithm with Adaptive Intensity Behaviour <i>Adam Robson, Kamlesh Mistry and Wai Lok Woo</i>	233
Measuring Emotion Velocity for Resemblance in Neural Network Facial Animation Controllers and Their Emotion Corpora <i>Sheldon Schiffer</i>	240
Conflicting Moral Codes for Self-Driving Cars: The Single Car Case <i>Ahmed Ibrahim, Yasmin Mansy, Nourhan Ehab and Amr Elmougy</i>	249
Machine Learning for Cognitive BDI Agents: A Compact Survey <i>Ömer Ibrahim Erduran</i>	257
A Study Toward Multi-Objective Multiagent Reinforcement Learning Considering Worst Case and Fairness Among Agents <i>Toshihiro Matsui</i>	269

Towards a Fleet of Autonomous Haul-Dump Vehicles in Hybrid Mines <i>Alexander Ferrein, Michael Reke, Ingrid Scholl, Benjamin Decker, Nicolas Limpert, Gjorgji Nikolovski and Stefan Schiffer</i>	278
Hierarchical Constraint Logic Programming for Multi-Agent Systems <i>Hiroshi Hosobe and Ken Satoh</i>	289
Parallel and Distributed Epirust: Towards Billion-Scale Agent-Based Epidemic Simulations <i>Sapana Kale, Shabbir Bawaji, Akshay Dewan, Meenakshi Dhanani, Kritika Gupta, Harshal Hayatnagar, Swapnil Khandekar, Jayanta Kshirsagar, Gautam Menon and Saurabh Mookherjee</i>	297
A Study of the Effectiveness of English Speaking of Teachable Agent using AI Chatbot <i>Kyung A. Lee, Soon-Bum Lim and Shankara Narayanan Nagarajan</i>	308
Modelling Agents in Industry 4.0 Applications Using Asset Administration Shell <i>Nikoletta Nikolova and Sjoerd Rongen</i>	315
Towards User-Centred Validation and Calibration of Agent-Based Models <i>Etienne Tack, Gilles Énée, Thomas Gaillard, Jean-Marie Fotsing and Frédéric Flouvat</i>	322
A Normative Multiagent Approach to Represent Data Regulation Concerns <i>Paulo Henrique Alves, Fernando Alberto Correia, Isabella Zalberg Frajhof, Clarisse Sieckenius de Souza and Helio Lopes</i>	330
Study on Decentralized Anytime Evolutionary Algorithm for DCOPs Containing Adversarial Agents <i>Toshihiro Matsui</i>	338
A Game Theoretic Approach to Attack Graphs <i>Davide Catta, Antonio Di Stasio, Jean Leneutre, Vadim Malvone and Aniello Murano</i>	347
Learning to Participate Through Trading of Reward Shares <i>Michael Kölle, Tim Matheis, Philipp Altmann and Kyryll Schmid</i>	355
Automated Agent Migration over Distributed Data Structures <i>Vishnu Mohan, Anirudh Potturi and Munehiro Fukuda</i>	363
Coupled Assignment Strategy of Agents in Many Targets Environment <i>Azizkhon Afzalov, Ahmad Lotfi and Jun He</i>	372
The Missing Tip: Lack of Micro-Movements Impairs Navigation Realism in Artificial Social Agents <i>Jacob Sharp and Ulysses Bernardet</i>	380
REPMAS: A Requirements Engineering Process for MultiAgent Systems: An Application Example <i>Iderli Pereira de Souza Filho, Gilleanes Thorwald Araujo Guedes and Giovane D'Avila Mendonça</i>	387
Towards Modelling and Verification of Social Explainable AI <i>Damian Kurpiewski, Wojciech Jamroga and Teofil Sidoruk</i>	396
Strategy Analysis for Competitive Bilateral Multi-Issue Negotiation <i>Takuma Oishi and Koji Hasebe</i>	404
An Agent-Based Model Study on Subsidy Fraud Risk in Technological Transition <i>Hao Yang, Xifeng Wu and Yu Chen</i>	412

SPECIAL SESSION ON NATURAL LANGUAGE PROCESSING IN ARTIFICIAL INTELLIGENCE

FULL PAPERS

Detection of Compound-Type Dark Jargons Using Similar Words <i>Takuro Hada, Yuichi Sei, Yasuyuki Tahara and Akihiko Ohsuga</i>	427
Natural Language Explanatory Arguments for Correct and Incorrect Diagnoses of Clinical Cases <i>Santiago Marro, Benjamin Molinet, Elena Cabrio and Serena Villata</i>	438
AUTHOR INDEX	451