

# **22nd International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2023)**

London, United Kingdom  
29 May - 2 June 2023

Volume 1 of 4

ISBN: 978-1-7138-7489-8

**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 International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS) All rights reserved.

Printed with permission by Curran Associates, Inc. (2024)

For permission requests, please contact International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS) at the address below.

[info@ifaamas.org](mailto:info@ifaamas.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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## VOLUME 1

### KEYNOTE TALKS

Multiagent Learning: From Fundamentals to Foundation Models .....	1
<i>Karl Tuyls</i>	
Common Sense: The Dark Matter of Language and Intelligence .....	2
<i>Yejin Choi</i>	
Geometric Principles of Individual and Collective Decision-Making .....	3
<i>Iain Couzin</i>	
Proportionality in Multiwinner Voting: The Power of Local Search .....	4
<i>Edith Elkind</i>	

### SESSION 1A: MULTIAGENT REINFORCEMENT LEARNING I

Trust Region Bounds for Decentralized PPO Under Non-stationarity .....	5
<i>Mingfei Sun, Sam Devlin, Jacob Beck, Katja Hofmann, Shimon Whiteson</i>	
Multi-Agent Reinforcement Learning for Adaptive Mesh Refinement .....	14
<i>Jiachen Yang, Ketan Mittal, Tarik Dzanic, Socratis Petrides, Brendan Keith, Brenden Petersen, Daniel Faissol, Robert Anderson</i>	
Adaptive Learning Rates for Multi-Agent Reinforcement Learning .....	23
<i>Jiechuan Jiang, Zongqing Lu</i>	
Adaptive Value Decomposition with Greedy Marginal Contribution Computation for Cooperative Multi-Agent Reinforcement Learning .....	31
<i>Shanqi Liu, Yujing Hu, Runze Wu, Dong Xing, Yu Xiong, Changjie Fan, Kun Kuang, Yong Liu</i>	
A Variational Approach to Mutual Information-Based Coordination for Multi-Agent Reinforcement Learning .....	40
<i>Woojun Kim, Whiyoung Jung, Myungsik Cho, Youngchul Sung</i>	
Mediated Multi-Agent Reinforcement Learning .....	49
<i>Dmitry Ivanov, Ilya Zisman, Kirill Chernyshev</i>	
TiZero: Mastering Multi-Agent Football with Curriculum Learning and Self-Play .....	67
<i>Fanqi Lin, Shiyu Huang, Tim Pearce, Wenze Chen, Wei-Wei Tu</i>	

### SESSION 1B: PLANNING

Ask and You Shall be Served: Representing & Solving Multi-agent Optimization Problems with Service Requesters and Providers .....	77
<i>Maya Lavie, Tehila Caspi, Omer Lev, Roie Zivan</i>	
Fairness Driven Efficient Algorithms for Sequenced Group Trip Planning Query Problem .....	86
<i>Napendra Solanki, Shweta Jain, Suman Banerjee, Yayathi Pavan Kumar S</i>	

Domain-Independent Deceptive Planning .....	95
<i>Adrian Price, Ramon Fraga Pereira, Peta Masters, Mor Vered</i>	
CAMS: Collision Avoiding Max-Sum for Mobile Sensor Teams .....	104
<i>Arseni Pertsovskiy, Roie Zivan, Noa Agmon</i>	
Risk-Constrained Planning for Multi-Agent Systems with Shared Resources .....	113
<i>Anna Gautier, Marc Rigter, Bruno Lacerda, Nick Hawes, Michael Wooldridge</i>	
Quantitative Planning with Action Deception in Concurrent Stochastic Games .....	122
<i>Chongyang Shi, Shuo Han, Jie Fu</i>	
Towards Computationally Efficient Responsibility Attribution in Decentralized Partially Observable MDPs .....	131
<i>Stelios Triantafyllou, Goran Radanovic</i>	
On-line Estimators for Ad-hoc Task Execution: Learning Types and Parameters of Teammates for Effective Teamwork .....	140
<i>Matheus Ap. do Carmo Alves, Elnaz Shafipour Yourdshahi, Amogh Varma, Leandro Soriano Marcolino, Jó Ueyama, Plamen Angelov</i>	

## **SESSION 1C: FAIR ALLOCATIONS**

Fair Allocation of Two Types of Chores .....	143
<i>Haris Aziz, Jeremy Lindsay, Angus Ritossa, Mashbat Suzuki</i>	
Fairly Dividing Mixtures of Goods and Chores under Lexicographic Preferences .....	152
<i>Hadi Hosseini, Sujoy Sikdar, Rohit Vaish, Lirong Xia</i>	
Graphical House Allocation .....	161
<i>Hadi Hosseini, Justin Payan, Rik Sengupta, Rohit Vaish, Vignesh Viswanathan</i>	
Approximation Algorithm for Computing Budget-Feasible EF1 Allocations .....	170
<i>Jiarui Gan, Bo Li, Xiaowei Wu</i>	
Yankee Swap: A Fast and Simple Fair Allocation Mechanism for Matroid Rank Valuations .....	179
<i>Vignesh Viswanathan, Yair Zick</i>	
Fairness in the Assignment Problem with Uncertain Priorities .....	188
<i>Zeyu Shen, Zhiyi Wang, Xingyu Zhu, Brandon Fain, Kamesh Munagala</i>	
Possible Fairness for Allocating Indivisible Resources .....	197
<i>Haris Aziz, Bo Li, Shiji Xing, Yu Zhou</i>	
Efficient Nearly-Fair Division with Capacity Constraints .....	206
<i>Hila Shoshan, Noam Hazon, Erel Segal-Halevi</i>	

## **SESSION 1D: EQUILIBRIA AND COMPLEXITIES OF GAMES**

Bridging the Gap Between Single and Multi Objective Games .....	224
<i>Willem Röpke, Carla Groenland, Roxana Rădulescu, Ann Nowé, Diederik M. Roijers</i>	
Is Nash Equilibrium Approximator Learnable? .....	233
<i>Zhijian Duan, Wenhan Huang, Dinghuai Zhang, Yali Du, Jun Wang, Yaodong Yang, Xiaotie Deng</i>	

Learning the Stackelberg Equilibrium in a Newsvendor Game .....	242
<i>Nicolò Cesa-Bianchi, Tommaso Cesari, Takayuki Osogami, Marco Scarsini, Segev Wasserkrug</i>	
Hedonic Games With Friends, Enemies, and Neutrals: Resolving Open Questions and Fine-Grained Complexity .....	251
<i>Jiehua Chen, Gergely Csáji, Sanjukta Roy, Sofia Simola</i>	
Debt Transfers in Financial Networks: Complexity and Equilibria .....	260
<i>Panagiotis Kanellopoulos, Maria Kyropoulou, Hao Zhou</i>	
A Study of Nash Equilibria in Multi-Objective Normal-Form Games .....	269
<i>Willem Röpke, Diederik M. Roijers, Ann Nowé, Roxana Rădulescu</i>	
Learning Properties in Simulation-Based Games .....	272
<i>Cyrus Cousins, Bhaskar Mishra, Enrique Areyan Viqueira, Amy Greenwald</i>	

### **SESSION 1E: HUMAN-AGENT TEAMS**

Establishing Shared Query Understanding in an Open Multi-Agent System .....	281
<i>Nikolaos Kondylidis, Ilaria Tiddi, Annette ten Teije</i>	
Communicating Agent Intentions for Human-Agent Decision Making under Uncertainty .....	290
<i>Julie Porteous, Alan Lindsay, Fred Charles</i>	
Trusting Artificial Agents: Communication Trumps Performance .....	299
<i>Marin Le Guillou, Laurent Prévot, Bruno Berberian</i>	
Nonverbal Human Signals Can Help Autonomous Agents Infer Human Preferences for Their Behavior .....	307
<i>Kate Candon, Jesse Chen, Yoony Kim, Zoe Hsu, Nathan Tsoi, Marynel Vázquez</i>	
On Subset Selection of Multiple Humans To Improve Human-AI Team Accuracy .....	317
<i>Sagalpreet Singh, Shweta Jain, Shashi Shekhar Jha</i>	
Do Explanations Improve the Quality of AI-assisted Human Decisions? An Algorithm-in-the-Loop Analysis of Factual & Counterfactual Explanations .....	326
<i>Lujain Ibrahim, Mohammad M. Ghassemi, Tuka Alhanai</i>	
Automated Task-Time Interventions to Improve Teamwork using Imitation Learning .....	335
<i>Sangwon Seo, Bing Han, Vaibhav Unhelkar</i>	
Should My Agent Lie for Me? A Study on Attitudes of US-based Participants Towards Deceptive AI in Selected Future-of-work .....	345
<i>Stefan Sarkadi, Peidong Mei, Edmond Awad</i>	

### **SESSION 1F: KNOWLEDGE REPRESENTATION AND REASONING I**

A Logic of Only-Believing over Arbitrary Probability Distributions .....	355
<i>Qihui Feng, Dixin Liu, Vaishak Belle, Gerhard Lakemeyer</i>	
A Deontic Logic of Knowingly Complying .....	364
<i>Carlos Areces, Valentín Cassano, Pablo F. Castro, Raúl Fervari, Andrés R. Saravia</i>	

Learning Logic Specifications for Soft Policy Guidance in POMCP .....	373
<i>Giulio Mazzi, Daniele Meli, Alberto Castellini, Alessandro Farinelli</i>	
Strategic (Timed) Computation Tree Logic .....	382
<i>Jaime Arias, Wojciech Jamroga, Wojciech Penczek, Laure Petrucci, Teofil Sidoruk</i>	
Attention! Dynamic Epistemic Logic Models of (In)attentive Agents .....	391
<i>Gaia Belardinelli, Thomas Bolander</i>	
(Arbitrary) Partial Communication .....	400
<i>Rustam Galimullin, Fernando R. Velázquez-Quesada</i>	
Epistemic Abstract Argumentation Framework: Formal Foundations, Computation and Complexity .....	409
<i>Gianvincenzo Alfano, Sergio Greco, Francesco Parisi, Irina Trubitsyna</i>	
Actions, Continuous Distributions and Meta-Beliefs .....	418
<i>Vaishak Belle</i>	

## **SESSION 2A: MULTIAGENT REINFORCEMENT LEARNING II**

AC2C: Adaptively Controlled Two-Hop Communication for Multi-Agent Reinforcement Learning .....	427
<i>Xuefeng Wang, Xinran Li, Jiawei Shao, Jun Zhang</i>	
Learning Structured Communication for Multi-Agent Reinforcement Learning .....	436
<i>Junjie Sheng, Xiangfeng Wang, Bo Jin, Wenhao Li, Jun Wang, Junchi Yan, Tsung-Hui Chang, Hongyuan Zha</i>	
Model-based Sparse Communication in Multi-agent Reinforcement Learning .....	439
<i>Shuai Han, Mehdi Dastani, Shihan Wang</i>	
Get It in Writing: Formal Contracts Mitigate Social Dilemmas in Multi-Agent RL .....	448
<i>Phillip J.K. Christoffersen, Andreas A. Haupt, Dylan Hadfield-Menell</i>	
The Benefits of Power Regularization in Cooperative Reinforcement Learning .....	457
<i>Michelle Li, Michael Dennis</i>	
MAC-PO: Multi-Agent Experience Replay via Collective Priority Optimization .....	466
<i>Yongsheng Mei, Hanhan Zhou, Tian Lan, Guru Venkataramani, Peng Wei</i>	
Self-Motivated Multi-Agent Exploration .....	476
<i>Shaowei Zhang, Jiahua Cao, Lei Yuan, Yang Yu, De-Chuan Zhan</i>	
Sequential Cooperative Multi-Agent Reinforcement Learning .....	485
<i>Yifan Zang, Jinmin He, Kai Li, Haobo Fu, Qiang Fu, Junliang Xing</i>	

## **SESSION 2B: PLANNING + TASK/RESOURCE ALLOCATION**

Online Coalitional Skill Formation .....	494
<i>Saar Cohen, Noa Agmon</i>	
Multi-Agent Consensus-based Bundle Allocation for Multi-mode Composite Tasks .....	504
<i>Gauthier Picard</i>	

Allocation Problem in Remote Teleoperation: Online Matching with Offline Reusable Resources and Delayed Assignments .....	513
<i>Osnat Ackerman Viden, Yohai Trabelsi, Pan Xu, Karthik Abinav Sankararaman, Oleg Maksimov, Sarit Kraus</i>	
Optimal Coalition Structures for Probabilistically Monotone Partition Function Games .....	522
<i>Shaheen Fatima, Michael Wooldridge</i>	
A Comparison of New Swarm Task Allocation Algorithms in Unknown Environments with Varying Task Density .....	525
<i>Grace Cai, Noble Harasha, Nancy Lynch</i>	
Abstracting Noisy Robot Programs .....	534
<i>Till Hofmann, Vaishak Belle</i>	
Structural Credit Assignment-Guided Coordinated MCTS: An Efficient and Scalable Method for Online Multiagent Planning .....	543
<i>Qian Che, Wanyuan Wang, Fengchen Wang, Tianchi Qiao, Xiang Liu, Jiuchuan Jiang, Bo An, Yichuan Jiang</i>	
Strategic Planning for Flexible Agent Availability in Large Taxi Fleets .....	552
<i>Rajiv Ranjan Kumar, Pradeep Varakantham, Shih-Fen Cheng</i>	

## **SESSION 2C: FAIR ALLOCATIONS + PUBLIC GOODS GAMES**

Equitability and Welfare Maximization for Allocating Indivisible Items .....	561
<i>Ankang Sun, Bo Chen, Xuan Vinh Doan</i>	
Best of Both Worlds: Agents with Entitlements .....	564
<i>Martin Hoefer, Marco Schmalhofer, Giovanna Varricchio</i>	
Mitigating Skewed Bidding for Conference Paper Assignment .....	573
<i>Inbal Rozenzweig, Reshef Meir, Nicholas Mattei, Ofra Amir</i>	
Price of Anarchy in a Double-Sided Critical Distribution System .....	582
<i>David Sychrovský, Jakub Černý, Sylvain Lichau, Martin Loebl</i>	
Improved EFX Approximation Guarantees under Ordinal-based Assumptions .....	591
<i>Evangelos Markakis, Christodoulos Santorinaios</i>	
Assigning Agents to Increase Network-Based Neighborhood Diversity .....	600
<i>Zirou Qiu, Andrew Yuan, Chen Chen, Madhav V. Marathe, S.S. Ravi, Daniel J. Rosenkrantz, Richard E. Stearns, Anil Vullikanti</i>	

Altruism, Collectivism and Egalitarianism: On a Variety of Prosocial Behaviors in Binary Networked Public Goods Games .....	609
<i>Jichen Li, Xiaotie Deng, Yukun Cheng, Yuqi Pan, Xuanzhi Xia, Zongjun Yang, Jan Xie</i>	

The Role of Space, Density and Migration in Social Dilemmas .....	625
<i>Jacques Bara, Fernando P. Santos, Paolo Turrini</i>	

## **SESSION 2D: BEHAVIORAL AND ALGORITHMIC GAME THEORY**

Non-strategic Econometrics (for Initial Play) .....	634
<i>Daniel Chui, Jason Hartline, James R. Wright</i>	

Efficient Stackelberg Strategies for Finitely Repeated Games .....	643
<i>Natalie Collina, Eshwar Ram Arunachaleswaran, Michael Kearns</i>	
Learning Density-Based Correlated Equilibria for Markov Games .....	652
<i>Libo Zhang, Yang Chen, Toru Takisaka, Bakh Khoussainov, Michael Witbrock, Jiamou Liu</i>	
IRS: An Incentive-compatible Reward Scheme for Algorand .....	661
<i>Maizi Liao, Wojciech Golab, Seyed Majid Zahedi</i>	
Data Structures for Deviation Payoffs .....	670
<i>Bryce Wiedenbeck, Erik Brinkman</i>	

## **SESSION 2E: HUMANS AND AI AGENTS**

PECAN: Leveraging Policy Ensemble for Context-Aware Zero-Shot Human-AI Coordination .....	679
<i>Xingzhou Lou, Jiaxian Guo, Junge Zhang, Jun Wang, Kaiqi Huang, Yali Du</i>	
Semi-Autonomous Systems with Contextual Competence Awareness .....	689
<i>Saaduddin Mahmud, Connor Basich, Shlomo Zilberstein</i>	
Joint Engagement Classification using Video Augmentation Techniques for Multi-person HRI in the wild .....	698
<i>Yubin Kim, Huili Chen, Sharifa Algohwinem, Cynthia Breazeal, Hae Won Park</i>	
Multiagent Inverse Reinforcement Learning via Theory of Mind Reasoning .....	708
<i>Haochen Wu, Pedro Sequeira, David V. Pynadath</i>	
Persuading to Prepare for Quitting Smoking with a Virtual Coach: Using States and User Characteristics to Predict Behavior .....	717
<i>Nele Albers, Mark A. Neerincx, Willem-Paul Brinkman</i>	
Think Twice: A Human-like Two-stage Conversational Agent for Emotional Response Generation .....	727
<i>Yushan Qian, Bo Wang, Shangzhao Ma, Wu Bin, Shuo Zhang, Dongming Zhao, Kun Huang, Yuejian Hou</i>	
Generating Stylistic and Personalized Dialogues for Virtual Agents in Narratives .....	737
<i>Weilai Xu, Fred Charles, Charlie Hargood</i>	
Reducing Racial Bias by Interacting with Virtual Agents: An Intervention in Virtual Reality .....	747
<i>David Obremski, Oheneba Bediako Akuffo, Leonie Lücke, Miriam Semineth, Sarah Tomiczek, Hanna-Finja Weichert, Birgit Lugrin</i>	

## **SESSION 2F: KNOWLEDGE REPRESENTATION AND REASONING II**

Provable Optimization of Quantal Response Leader-Follower Games with Exponentially Large Action Spaces .....	756
<i>Jinzha Li, Daniel Fink, Christopher Wood, Carla P. Gomes, Yexiang Xue</i>	

## **VOLUME 2**

Playing to Learn, or to Keep Secret: Alternating-Time Logic Meets Information Theory .....	766
<i>Masoud Tabatabaei, Wojciech Jamroga</i>	

Synthesis of Resource-Aware Controllers Against Rational Agents .....	775
<i>Rodica Condurache, Catalin Dima, Youssouf Oualhadj, Nicolas Troquard</i>	
Computationally Feasible Strategies .....	784
<i>Catalin Dima, Wojciech Jamroga</i>	
Towards the Verification of Strategic Properties in Multi-Agent Systems with Imperfect Information .....	793
<i>Angelo Ferrando, Vadim Malvone</i>	
<b><u>SESSION 3A: REINFORCEMENT LEARNING</u></b>	
Follow your Nose: Using General Value Functions for Directed Exploration in Reinforcement Learning .....	802
<i>Durgesh Kalwar, Omkar Shelke, Somjit Nath, Hardik Meisheri, Harshad Khadilkar</i>	
FedFormer: Contextual Federation with Attention in Reinforcement Learning .....	810
<i>Liam Hebert, Lukasz Golab, Pascal Poupart, Robin Cohen</i>	
Diverse Policy Optimization for Structured Action Space .....	819
<i>Wenhai Li, Baoxiang Wang, Shanchao Yang, Hongyuan Zha</i>	
Enhancing Reinforcement Learning Agents with Local Guides .....	829
<i>Paul Daoudi, Bogdan Robu, Christophe Prieur, Ludovic Dos Santos, Merwan Barlier</i>	
Scalar Reward is Not Enough .....	839
<i>Peter Vamplew, Benjamin J. Smith, Johan Källström, Gabriel Ramos, Roxana Rădulescu, Diederik M. Roijers, Conor F. Hayes, Friedrik Hentz, Patrick Mannion, Pieter J.K. Libin, Richard Dazeley, Cameron Foale</i>	
Targeted Search Control in AlphaZero for Effective Policy Improvement .....	842
<i>Alexandre Trudeau, Michael Bowling</i>	
Out-of-Distribution Detection for Reinforcement Learning Agents with Probabilistic Dynamics Models .....	851
<i>Tom Haider, Karsten Roscher, Felipe Schmoeller da Roza, Stephan Günnemann</i>	
Knowledge Compilation for Constrained Combinatorial Action Spaces in Reinforcement Learning .....	860
<i>Jiajing Ling, Moritz Lukas Schuler, Akshat Kumar, Pradeep Varakantham</i>	
<b><u>SESSION 3B: MULTIAGENT PATH FINDING</u></b>	
Anonymous Multi-Agent Path Finding with Individual Deadlines .....	869
<i>Gilad Fine, Dor Atzmon, Noa Agmon</i>	
Learn to Solve the Min-max Multiple Traveling Salesmen Problem with Reinforcement Learning .....	878
<i>Junyoung Park, Changhyun Kwon, Jinkyoo Park</i>	
Counterfactual Fairness Filter for Fair-Delay Multi-Robot Navigation .....	887
<i>Hikaru Asano, Ryo Yonetani, Mai Nishimura, Tadashi Kozuno</i>	
Improved Complexity Results and an Efficient Solution for Connected Multi-Agent Path Finding .....	896
<i>Isseïnie Calviac, Ocan Sankur, François Schwarzentruber</i>	

Optimally Solving the Multiple Watchman Route Problem with Heuristic Search .....	905
<i>Yaakov Livne, Dor Atzmon, Shawn Skyler, Eli Boyarski, Amir Shapiro, Ariel Felner</i>	
Distributed Planning with Asynchronous Execution with Local Navigation for Multi-agent Pickup and Delivery Problem .....	914
<i>Yuki Miyashita, Tomoki Yamauchi, Toshiharu Sugawara</i>	
Energy-aware UAV Path Planning with Adaptive Speed .....	923
<i>Jonathan Diller, Qi Han</i>	
Coordination of Multiple Robots along Given Paths with Bounded Junction Complexity .....	932
<i>Mikkel Abrahamsen, Tzvika Geft, Dan Halperin, Barak Ugav</i>	

### **SESSION 3C: MATCHING**

Best of Both Worlds Fairness under Entitlements .....	941
<i>Haris Aziz, Aditya Ganguly, Evi Micha</i>	
Probabilistic Rationing with Categorized Priorities: Processing Reserves Fairly and Efficiently .....	949
<i>Haris Aziz</i>	
Semi-Popular Matchings and Copeland Winners .....	957
<i>Telikepalli Kavitha, Rohit Vaish</i>	
Host Community Respecting Refugee Housing .....	966
<i>Dulan Knop, Simon Schierreich</i>	
Online Matching with Delays and Stochastic Arrival Times .....	976
<i>Mathieu Mari, Michał Pawłowski, Runtian Ren, Piotr Sankowski</i>	
Adapting Stable Matchings to Forced and Forbidden Pairs .....	985
<i>Niclas Boehmer, Klaus Heeger</i>	
Stable Marriage in Euclidean Space .....	994
<i>Yinghui Wen, Zhongyi Zhang, Jiong Guo</i>	
A Map of Diverse Synthetic Stable Roommates Instances .....	1003
<i>Niclas Boehmer, Klaus Heeger, Stanisław Szufa</i>	

### **SESSION 3D: LEARNING IN GAMES**

Empirical Game-Theoretic Analysis for Mean Field Games .....	1025
<i>Yongzhao Wang, Michael P. Wellman</i>	
Differentiable Arbitrating in Zero-sum Markov Games .....	1034
<i>Jing Wang, Meichen Song, Feng Gao, Boyi Liu, Zhaoran Wang, Yi Wu</i>	
Learning Parameterized Families of Games .....	1044
<i>Madelyn Gatchel, Bryce Wiedenbeck</i>	
Fictitious Cross-Play: Learning Global Nash Equilibrium in Mixed Cooperative-Competitive Games .....	1053
<i>Zelai Xu, Yancheng Liang, Chao Yu, Yu Wang, Yi Wu</i>	

Cost Inference for Feedback Dynamic Games from Noisy Partial State Observations and Incomplete Trajectories .....	1062
<i>Jingqi Li, Chih-Yuan Chiu, Lasse Peters, Somayeh Sojoudi, Claire Tomlin, David Fridovich-Keil</i>	
Multiplicative Weight Updates for Extensive Form Games .....	1071
<i>Chirag Chhablani, Michael Sullins, Ian A. Kash</i>	
A Hybrid Framework of Reinforcement Learning and Physics-Informed Deep Learning for Spatiotemporal Mean Field Games .....	1079
<i>Xu Chen, Shuo Liu, Xuan Di</i>	
Adversarial Inverse Reinforcement Learning for Mean Field Games .....	1088
<i>Yang Chen, Libo Zhang, Jiamou Liu, Michael Witbrock</i>	

### **SESSION 3E: LEARNING WITH HUMANS AND ROBOTS**

GANterfactual-RL: Understanding Reinforcement Learning Agents' Strategies through Visual Counterfactual Explanations .....	1097
<i>Tobias Huber, Maximilian Demmler, Silvan Mertes, Matthew L. Olson, Elisabeth André</i>	
Asynchronous Multi-Agent Reinforcement Learning for Efficient Real-Time Multi-Robot Cooperative Exploration .....	1107
<i>Chao Yu, Xinyi Yang, Jiaxuan Gao, Jiayu Chen, Yunfei Li, Jijia Liu, Yunfei Xiang, Ruixin Huang, Huazhong Yang, Yi Wu, Yu Wang</i>	
Dec-AIRL: Decentralized Adversarial IRL for Human-Robot Teaming .....	1116
<i>Prasanth Sengudu Suresh, Yikang Gui, Prashant Doshi</i>	
Structural Attention-based Recurrent Variational Autoencoder for Highway Vehicle Anomaly Detection .....	1125
<i>Neeloy Chakraborty, Aamir Hasan, Shuijing Liu, Tianchen Ji, Weihang Liang, D. Livingston McPherson, Katherine Driggs-Campbell</i>	
Controlled Diversity with Preference : Towards Learning a Diverse Set of Desired Skills .....	1135
<i>Maxence Hussonnois, Thommen George Karimpanal, Santu Rana</i>	
Learning from Multiple Independent Advisors in Multi-agent Reinforcement Learning .....	1144
<i>Sriram Ganapathi Subramanian, Matthew E. Taylor, Kate Larson, Mark Crowley</i>	

### **SESSION 3F: ENGINEERING MULTIAGENT SYSTEMS**

Kiko: Programming Agents to Enact Interaction Models .....	1154
<i>Samuel H. Christie V, Munindar P. Singh, Amit K. Chopra</i>	
CraftEnv: A Flexible Collective Robotic Construction Environment for Multi-Agent Reinforcement Learning .....	1164
<i>Rui Zhao, Xu Liu, Yizheng Zhang, Minghao Li, Cheng Zhou, Shuai Li, Lei Han</i>	
Feedback-Guided Intention Scheduling for BDI Agents .....	1173
<i>Michael Dann, John Thangarajah, Minyi Li</i>	
A Behaviour-Driven Approach for Testing Requirements via User and System Stories in Agent Systems .....	1182
<i>Sebastian Rodriguez, John Thangarajah, Michael Winikoff</i>	

ML-MAS: A Hybrid AI Framework for Self-Driving Vehicles .....	1191
<i>Hilal Al Shukairi, Rafael C. Cardoso</i>	
Signifiers as a First-class Abstraction in Hypermedia Multi-Agent Systems .....	1200
<i>Danai Vachtsevanou, Andrei Ciortea, Simon Mayer, Jérémie Lemée</i>	
MAIDS - A Framework for the Development of Multi-Agent Intentional Dialogue Systems .....	1209
<i>Débora C. Engelmann, Alison R. Panisson, Renata Vieira, Jomi Fred Hübner, Viviana Mascardi, Rafael H. Bordini</i>	
Mandrake: Multiagent Systems as a Basis for Programming Fault-Tolerant Decentralized Applications .....	1218
<i>Samuel H. Christie V, Munindar P. Singh, Amit K. Chopra</i>	

## **SESSION 4A: REINFORCEMENT AND IMITATION LEARNING**

Curriculum Offline Reinforcement Learning .....	1221
<i>Yuanying Cai, Chuheng Zhang, Hanye Zhao, Li Zhao, Jiang Bian</i>	
Decentralized Model-Free Reinforcement Learning in Stochastic Games with Average-Reward Objective .....	1230
<i>Romain Cravic, Nicolas Gast, Bruno Gaujal</i>	
Less Is More: Refining Datasets for Offline Reinforcement Learning with Reward Machines .....	1239
<i>Haoyuan Sun, Feng Wu</i>	
A Self-Organizing Neuro-Fuzzy Q-Network: Systematic Design with Offline Hybrid Learning .....	1248
<i>John Wesley Hostetter, Mark Abdelshiheed, Tiffany Barnes, Min Chi</i>	
Learning to Coordinate from Offline Datasets with Uncoordinated Behavior Policies .....	1258
<i>Jinming Ma, Feng Wu</i>	
D-Shape: Demonstration-Shaped Reinforcement Learning via Goal-Conditioning .....	1267
<i>Caroline Wang, Garrett Warnell, Peter Stone</i>	
How To Guide Your Learner: Imitation Learning with Active Adaptive Expert Involvement .....	1276
<i>Xu-Hui Liu, Feng Xu, Xinyu Zhang, Tianyuan Liu, Shengyi Jiang, Ruifeng Chen, Zongzhang Zhang, Yang Yu</i>	
Imitating Opponent to Win: Adversarial Policy Imitation Learning in Two-player Competitive Games .....	1285
<i>The Viet Bui, Tien Mai, Thanh H. Nguyen</i>	

## **SESSION 4B: MULTI-ARMED BANDITS + MONTE CARLO TREE SEARCH**

Indexability is Not Enough for Whittle: Improved, Near-Optimal Algorithms for Restless Bandits .....	1294
<i>Abheek Ghosh, Dheeraj Nagaraj, Manish Jain, Milind Tambe</i>	
Avoiding Starvation of Arms in Restless Multi-Armed Bandits .....	1303
<i>Dexun Li, Pradeep Varakantham</i>	
Restless Multi-Armed Bandits for Maternal and Child Health: Results from Decision-Focused Learning .....	1312
<i>Shresth Verma, Aditya Mate, Kai Wang, Neha Madhiwalla, Aparna Hegde, Aparna Taneja, Milind Tambe</i>	

Fairness for Workers Who Pull the Arms: An Index Based Policy for Allocation of Restless Bandit Tasks .....	1321
<i>Arpita Biswas, Jackson A. Killian, Paula Rodriguez Diaz, Susobhan Ghosh, Milind Tambe</i>	
On Regret-optimal Cooperative Nonstochastic Multi-armed Bandits .....	1329
<i>Jialin Yi, Milan Vojnović</i>	
Equilibrium Bandits: Learning Optimal Equilibria of Unknown Dynamics .....	1336
<i>Siddharth Chandak, Ilai Bistritz, Nicholas Bambozzi</i>	
ExPoSe: Combining State-Based Exploration with Gradient-Based Online Search .....	1345
<i>Dixant Mittal, Siddharth Aravindan, Wee Sun Lee</i>	
Formally-Sharp DAgger for MCTS: Lower-Latency Monte Carlo Tree Search using Data Aggregation with Formal Methods .....	1354
<i>Debraj Chakraborty, Damien Busatto-Gaston, Jean-François Raskin, Guillermo A. Pérez</i>	

#### **SESSION 4C: AUCTIONS + VOTING**

Price of Anarchy for First Price Auction with Risk-Averse Bidders .....	1363
<i>Zhiqiang Zhuang, Kewen Wang, Zhe Wang</i>	
A Redistribution Framework for Diffusion Auctions .....	1370
<i>Sizhe Gu, Yao Zhang, Yida Zhao, Dengji Zhao</i>	
Sybil-Proof Diffusion Auction in Social Networks .....	1379
<i>Hongyin Chen, Xiaotie Deng, Ying Wang, Yue Wu, Dengji Zhao</i>	
Representing and Reasoning about Auctions .....	1388
<i>Munyque Mittelmann, Laurent Perrussel, Sylvain Bouveret</i>	
Revisiting the Distortion of Distributed Voting .....	1391
<i>Aris Filos-Ratsikas, Alexandros A. Voudouris</i>	
Bounded Approval Ballots: Balancing Expressiveness and Simplicity for Multiwinner Elections .....	1400
<i>Dorothea Baumeister, Linus Boes, Christian Laußmann, Simon Rey</i>	
On the Distortion of Single Winner Elections with Aligned Candidates .....	1409
<i>Dimitris Fotakis, Laurent Gourvès</i>	
SAT-based Judgment Aggregation .....	1412
<i>Ari Conati, Andreas Niskanen, Matti Järvisalo</i>	

#### **SESSION 4E: ROBOTICS**

Decentralised and Cooperative Control of Multi-Robot Systems through Distributed Optimisation .....	1421
<i>Yi Dong, Zhongguo Li, Xingyu Zhao, Zhengtao Ding, Xiaowei Huang</i>	
Byzantine Resilience at Swarm Scale: A Decentralized Blocklist Protocol from Inter-robot Accusations .....	1430
<i>Kacper Wardega, Max von Hippel, Roberto Tron, Cristina Nita-Rotaru, Wenchao Li</i>	
Stigmergy-based, Dual-Layer Coverage of Unknown Regions .....	1439
<i>Ori Rappel, Michael Amir, Alfred M. Bruckstein</i>	

Mitigating Imminent Collision for Multi-robot Navigation: A TTC-force Reward Shaping Approach .....	1448
<i>Jinlin Chen, Jiannong Cao, Zhiqin Cheng, Wei Li</i>	
Gathering of Anonymous Agents .....	1457
<i>Arnhav Datar, Nischith Shadagopan M N, John Augustine</i>	
Safe Deep Reinforcement Learning by Verifying Task-Level Properties .....	1466
<i>Enrico Marchesini, Luca Marzari, Alessandro Farinelli, Christopher Amato</i>	
Decentralized Safe Navigation for Multi-agent Systems via Risk-aware Weighted Buffered Voronoi Cells .....	1476
<i>Yiwei Lyu, John M. Dolan, Wenhao Luo</i>	
Heterogeneous Multi-Robot Reinforcement Learning .....	1485
<i>Matteo Bettini, Ajay Shankar, Amanda Prorok</i>	

#### **SESSION 4F: INNOVATIVE APPLICATIONS**

Efficient Interactive Recommendation via Huffman Tree-based Policy Learning .....	1495
<i>Longxiang Shi, Zilin Zhang, Shoujin Wang, Binbin Zhou, Minghui Wu, Cheng Yang, Shijian Li</i>	
HOPE: Human-Centric Off-Policy Evaluation for E-Learning and Healthcare .....	1504
<i>Ge Gao, Song Ju, Markel Sanz Ausin, Min Chi</i>	
ShelfHelp: Empowering Humans to Perform Vision-Independent Manipulation Tasks with a Socially Assistive Robotic Cane .....	1514
<i>Shivendra Agrawal, Suresh Nayak, Ashutosh Naik, Bradley Hayes</i>	
Preference-Aware Delivery Planning for Last-Mile Logistics .....	1524
<i>Qian Shao, Shih-Fen Cheng</i>	
Multi-Agent Reinforcement Learning with Safety Layer for Active Voltage Control .....	1533
<i>Yufeng Shi, Mingxiao Feng, Minrui Wang, Wengang Zhou, Houqiang Li</i>	

#### **VOLUME 3**

Multi-Agent Signalless Intersection Management with Dynamic Platoon Formation .....	1542
<i>Phuriwat Worrawichaipat, Enrico H. Gerding, Ioannis Kaparias, Sarvapali Ramchurn</i>	
SocialLight: Distributed Cooperation Learning towards Network-Wide Traffic Signal Control .....	1551
<i>Harsh Goel, Yifeng Zhang, Mehul Damani, Guillaume Sartoretti</i>	
Model-Based Reinforcement Learning for Auto-bidding in Display Advertising .....	1560
<i>Shuang Chen, Qisen Xu, Liang Zhang, Yongbo Jin, Wenhao Li, Linjian Mo</i>	

#### **SESSION 5A: MULTIAGENT REINFORCEMENT LEARNING III**

Learning Inter-Agent Synergies in Asymmetric Multiagent Systems .....	1569
<i>Gaurav Dixit, Kagan Tumer</i>	
Asymptotic Convergence and Performance of Multi-Agent Q-learning Dynamics .....	1578
<i>Aamal Abbas Hussain, Francesco Belardinelli, Georgios Piliouras</i>	

Model-based Dynamic Shielding for Safe and Efficient Multi-agent Reinforcement Learning .....	1587
<i>Wenli Xiao, Yiwei Lyu, John Dolan</i>	
Toward Risk-based Optimistic Exploration for Cooperative Multi-Agent Reinforcement Learning .....	1597
<i>Jihwan Oh, Joonkee Kim, Minchan Jeong, Se-Young Yun</i>	
Counterexample-Guided Policy Refinement in Multi-Agent Reinforcement Learning .....	1606
<i>Briti Gangopadhyay, Pallab Dasgupta, Soumyajit Dey</i>	
Prioritized Tasks Mining for Multi-Task Cooperative Multi-Agent Reinforcement Learning .....	1615
<i>Yang Yu, Qiyue Yin, Junge Zhang, Kaiqi Huang</i>	
M3: Modularization for Multi-task and Multi-agent Offline Pre-training .....	1624
<i>Linghui Meng, Jingqing Ruan, Xuantang Xiong, Xiyun Li, Xi Zhang, Dengpeng Xing, Bo Xu</i>	

## **SESSION 5B: GRAPH NEURAL NETWORKS + TRANSFORMERS**

User Device Interaction Prediction via Relational Gated Graph Attention Network and Intent-aware Encoder .....	1634
<i>Jingyu Xiao, Qingsong Zou, Qing Li, Dan Zhao, Kang Li, Wenxin Tang, Runjie Zhou, Yong Jiang</i>	
Inferring Player Location in Sports Matches: Multi-Agent Spatial Imputation from Limited Observations .....	1643
<i>Gregory Everett, Ryan J. Beal, Tim Matthews, Joseph Early, Timothy J. Norman, Sarvapali D. Ramchurn</i>	
Learning Graph-Enhanced Commander-Executor for Multi-Agent Navigation .....	1652
<i>Xinyi Yang, Shiyu Huang, Yiwen Sun, Yuxiang Yang, Chao Yu, Wei-Wei Tu, Huazhong Yang, Yu Wang</i>	
Permutation-Invariant Set Autoencoders with Fixed-Size Embeddings for Multi-Agent Learning .....	1661
<i>Ryan Kortvelesy, Steven Morad, Amanda Prorok</i>	
Infomaxformer: Maximum Entropy Transformer for Long Time-Series Forecasting Problem .....	1670
<i>Peiwang Tang, Xianchao Zhang</i>	
TransfQMIX: Transformers for Leveraging the Graph Structure of Multi-Agent Reinforcement Learning Problems .....	1679
<i>Matteo Gallici, Mario Martin, Ivan Masmitja</i>	
Intelligent Onboard Routing in Stochastic Dynamic Environments using Transformers .....	1688
<i>Rohit Chowdhury, Raswanth Murugan, Deepak Subramani</i>	

## **SESSION 5C: VOTING I**

Characterizations of Sequential Valuation Rules .....	1697
<i>Chris Dong, Patrick Lederer</i>	
Collecting, Classifying, Analyzing, and Using Real-World Ranking Data .....	1706
<i>Niclas Boehmer, Nathan Schaar</i>	
Margin of Victory for Weighted Tournament Solutions .....	1716
<i>Michelle Döring, Jannik Peters</i>	

Bribery Can Get Harder in Structured Multiwinner Approval Election .....	1725
<i>Bartosz Kusek, Robert Brederock, Piotr Faliszewski, Andrzej Kaczmarczyk, Dušan Knop</i>	
Strategyproof Social Decision Schemes on Super Condorcet Domains .....	1734
<i>Felix Brandt, Patrick Lederer, Sascha Tausch</i>	
Separating and Collapsing Electoral Control Types .....	1743
<i>Benjamin Carleton, Michael C. Chavrimootoo, Lane A. Hemaspaandra, David E. Narváez, Conor Taliancich, Henry B. Welles</i>	
The Distortion of Approval Voting with Runoff .....	1752
<i>Soroush Ebadian, Mohamad Latifian, Nisarg Shah</i>	

## **SESSION 5D: BLUE SKY**

Models of Anxiety for Agent Deliberation: The Benefits of Anxiety-Sensitive Agents .....	1761
<i>Arvid Horned, Loïs Vanhee</i>	
Social Choice Around Decentralized Autonomous Organizations: On the Computational Social Choice of Digital Communities .....	1768
<i>Nimrod Talmon</i>	
Value Inference in Sociotechnical Systems .....	1774
<i>Enrico Liscio, Roger Lera-Leri, Filippo Bistaffa, Roel I.J. Dobbe, Catholijn M. Jonker, Maite Lopez-Sánchez, Juan A. Rodriguez-Aguilar, Pradeep K. Murukannaiah</i>	
Presenting Multiagent Challenges in Team Sports Analytics .....	1781
<i>David Radke, Alexi Orchard</i>	
Communication Meaning: Foundations and Directions for Systems Research .....	1786
<i>Amit K. Chopra, Samuel H. Christie V</i>	
The Rule-Tool-User Nexus in Digital Collective Decisions .....	1792
<i>Zoi Terzopoulou, Marijn A. Keijzer, Gogulapati Sreedurga, Jobst Heitzig</i>	
Epistemic Side Effects: An AI Safety Problem .....	1797
<i>Toryn Q. Klassen, Parand Alizadeh Alamdari, Sheila A. McIlraith</i>	
Citizen-Centric Multiagent Systems .....	1802
<i>Sebastian Stein, Vahid Yazdanpanah</i>	

## **SESSION 5E: ADVERSARIAL LEARNING + SOCIAL NETWORKS + CAUSAL GRAPHS**

FedMM: A Communication Efficient Solver for Federated Adversarial Domain Adaptation .....	1808
<i>Yan Shen, Jian Du, Han Zhao, Zhanghexuan Ji, Chunwei Ma, Mingchen Gao</i>	
Adversarial Link Prediction in Spatial Networks .....	1817
<i>Michał Tomasz Godziszewski, Yevgeniy Vorobeychik, Tomasz Michalak</i>	
Distributed Mechanism Design in Social Networks .....	1826
<i>Haoxin Liu, Yao Zhang, Dengji Zhao</i>	

Implicit Poisoning Attacks in Two-Agent Reinforcement Learning: Adversarial Policies for Training-Time Attacks .....	1835
<i>Mohammad Mohammadi, Jonathan Nöther, Debmalya Mandal, Adish Singla, Goran Radanovic</i>	
How to Turn an MAS into a Graphical Causal Model .....	1845
<i>H. Van Dyke Parunak</i>	

## **SESSION 5F: SIMULATIONS**

Differentiable Agent-based Epidemiology .....	1848
<i>Ayush Chopra, Alexander Rodriguez, Jayakumar Subramanian, Arnaud Quera-Bofarull, Balaji Krishnamurthy, B. Aditya Prakash, Ramesh Raskar</i>	
Social Distancing via Social Scheduling .....	1858
<i>Deepesh Kumar Lall, Garima Shakya, Swaprava Nath</i>	
Don't Simulate Twice: One-Shot Sensitivity Analyses via Automatic Differentiation .....	1867
<i>Arnaud Quera-Bofarull, Ayush Chopra, Joseph Aylett-Bullock, Carolina Cuesta-Lazaro, Anisoara Calinescu, Ramesh Raskar, Michael Wooldridge</i>	
Markov Aggregation for Speeding Up Agent-Based Movement Simulations .....	1877
<i>Bernhard C. Geiger, Alireza Jahani, Hussain Hussain, Derek Groen</i>	
Agent-Based Modeling of Human Decision-makers Under Uncertain Information During Supply Chain Shortages .....	1886
<i>Nutchanon Yongsatianchot, Noah Chicoine, Jacqueline Griffin, Ozlem Ergun, Stacy Marsella</i>	
Simulating Panic Amplification in Crowds via Density-Emotion Interaction .....	1895
<i>Erik van Haeringen, Charlotte Gerritsen</i>	
Modelling Agent Decision Making in Agent-based Simulation - Analysis Using an Economic Technology Uptake Model .....	1903
<i>Franziska Klügl, Hildegunn Kyvik Nordås</i>	
Emotion Contagion in Agent-based Simulations of Crowds: A Systematic Review .....	1912
<i>Erik van Haeringen, Charlotte Gerritsen, Koen Hindriks</i>	

## **SESSION 6A: DEEP LEARNING**

Worst-Case Adaptive Submodular Cover .....	1915
<i>Jing Yuan, Shaojie Tang</i>	
Minimax Strikes Back .....	1923
<i>Quentin Cohen-Solal, Tristan Cazenave</i>	
Automatic Noise Filtering with Dynamic Sparse Training in Deep Reinforcement Learning .....	1932
<i>Bram Grooten, Ghada Sokar, Shibhansh Dohare, Elena Mocanu, Matthew E. Taylor, Mykola Pechenizkiy, Decebal Constantin Mocanu</i>	
Parameter Sharing with Network Pruning for Scalable Multi-Agent Deep Reinforcement Learning .....	1942
<i>Woojun Kim, Youngchul Sung</i>	
Learning Rewards to Optimize Global Performance Metrics in Deep Reinforcement Learning .....	1951
<i>Junqi Qian, Paul Weng, Chenmien Tan</i>	

- A Deep Reinforcement Learning Approach for Online Parcel Assignment ..... 1961  
*Hao Zeng, Qiong Wu, Kunpeng Han, Junying He, Haoyuan Hu*

- CoRaL: Continual Representation Learning for Overcoming Catastrophic Forgetting ..... 1969  
*Mohammad Samin Yasar, Tariq Iqbal*

## **SESSION 6B: MULTI-OBJECTIVE PLANNING AND LEARNING**

- Revealed Multi-Objective Utility Aggregation in Human Driving ..... 1979  
*Atrisha Sarkar, Kate Larson, Krzysztof Czarnecki*

- A Brief Guide to Multi-Objective Reinforcement Learning and Planning ..... 1988  
*Conor F. Hayes, Roxana Rădulescu, Eugenio Bargiacchi, Johan Källström, Matthew Macfarlane, Mathieu Reymond, Timothy Verstraeten, Luisa M. Zintgraf, Richard Dazeley, Fredrik Heintz, Enda Howley, Athirai A. Irissappane, Patrick Mannion, Ann Nowé, Gabriel Ramos, Marcello Restelli, Peter Vamplew, Diederik M. Roijers*

- Welfare and Fairness in Multi-objective Reinforcement Learning ..... 1991  
*Ziming Fan, Nianli Peng, Muhang Tian, Brandon Fain*

- Preference-Based Multi-Objective Multi-Agent Path Finding ..... 2000  
*Florence Ho, Shinji Nakadai*

- Sample-Efficient Multi-Objective Learning via Generalized Policy Improvement Prioritization ..... 2003  
*Lucas N. Alegre, Ana L. C. Bazzan, Diederik M. Roijers, Ann Nowé, Bruno C. da Silva*

- MADDM: Multi-Advisor Dynamic Binary Decision-Making by Maximizing the Utility ..... 2013  
*Zhaori Guo, Timothy J. Norman, Enrico H. Gerding*

## **SESSION 6C: VOTING II**

- On the Complexity of the Two-Stage Majority Rule ..... 2022  
*Yongjie Yang*

- Fairness in Participatory Budgeting via Equality of Resources ..... 2031  
*Jan Maly, Simon Rey, Ulle Endriss, Martin Lackner*

- Free-Riding in Multi-Issue Decisions ..... 2040  
*Martin Lackner, Jan Maly, Oliviero Nardi*

- k-Prize Weighted Voting Games ..... 2049  
*Wei-Chen Lee, David Hyland, Alessandro Abate, Edith Elkind, Jiarui Gan, Julian Gutierrez, Paul Harrenstein, Michael Wooldridge*

- Computing the Best Policy that Survives a Vote ..... 2058  
*Andrei Constantinescu, Roger Wattenhofer*

- Voting by Axioms ..... 2067  
*Marie Christin Schmidtlein, Ulle Endriss*

- A Hotelling-Downs Game for Strategic Candidacy with Binary Issues ..... 2076  
*Javier Maass, Vincent Mousseau, Anaëlle Wilczynski*

- Voting with Limited Energy: A Study of Plurality and Borda ..... 2085  
*Zoi Terzopoulou*

## **SESSION 6D: MECHANISM DESIGN**

Non-Obvious Manipulability for Single-Parameter Agents and Bilateral Trade .....	2107
<i>Thomas Archbold, Bart de Keijzer, Carmine Ventre</i>	
Mechanism Design for Improving Accessibility to Public Facility.....	2116
<i>Hau Chan, Chenhao Wang</i>	
Explicit Payments for Obviously Strategyproof Mechanisms .....	2125
<i>Diodato Ferraioli, Carmine Ventre</i>	
Bilevel Entropy based Mechanism Design for Balancing Meta in Video Games .....	2134
<i>Sumedh Pendurkar, Chris Chow, Luo Jie, Guni Sharon</i>	
IQ-Flow: Mechanism Design for Inducing Cooperative Behavior to Self-Interested Agents in Sequential Social Dilemmas .....	2143
<i>Bengisu Guresti, Abdullah Vanlioglu, Nazim Kemal Ure</i>	
Settling the Distortion of Distributed Facility Location .....	2152
<i>Aris Filos-Ratsikas, Panagiotis Kanellopoulos, Alexandros A. Voudouris, Rongsen Zhang</i>	
Cost Sharing under Private Valuation and Connection Control .....	2161
<i>Tianyi Zhang, Junyu Zhang, Sizhe Gu, Dengji Zhao</i>	
Facility Location Games with Thresholds .....	2170
<i>Houyu Zhou, Guochuan Zhang, Lili Mei, Minming Li</i>	

## **SESSION 6E: SOCIAL NETWORKS**

Random Majority Opinion Diffusion: Stabilization Time, Absorbing States, and Influential Nodes .....	2179
<i>Ahad N. Zehmakan</i>	
Axiomatic Analysis of Medial Centrality Measures .....	2188
<i>Wiktoria Kosny, Oskar Skibski</i>	
Online Influence Maximization under Decreasing Cascade Model .....	2197
<i>Fang Kong, Jize Xie, Baoxiang Wang, Tao Yao, Shuai Li</i>	
Node Conversion Optimization in Multi-hop Influence Networks .....	2205
<i>Jie Zhang, Yuezhou Lv, Zihe Wang</i>	
Decentralized Core-periphery Structure in Social Networks Accelerates Cultural Innovation in Agent-based Modeling .....	2213
<i>Jesse Milzman, Cody Moser</i>	
Being an Influencer is Hard: The Complexity of Influence Maximization in Temporal Graphs with a Fixed Source .....	2222
<i>Argyrios Deligkas, Eduard Eiben, Tiger-Lily Goldsmith, George Skretas</i>	
Enabling Imitation-Based Cooperation in Dynamic Social Networks .....	2231
<i>Jacques Bara, Paolo Turrini, Giulia Andrichetto</i>	
The Grapevine Web: Analysing the Spread of False Information in Social Networks with Corrupted Sources .....	2234
<i>Jacques Bara, Charlie Pilgrim, Paolo Turrini, Stanislav Zhydkov</i>	

## **SESSION 6F: NORMS**

The Importance of Credo in Multiagent Learning .....	2243
<i>David Radke, Kate Larson, Tim Brecht</i>	
Contextual Integrity for Argumentation-based Privacy Reasoning .....	2253
<i>Gideon Ogunniye, Nadin Kökciyan</i>	
Predicting Privacy Preferences for Smart Devices as Norms .....	2262
<i>Marc Serramia, William Seymour, Natalia Criado, Michael Luck</i>	
Agent-directed Runtime Norm Synthesis .....	2271
<i>Andreas Morris-Martin, Marina De Vos, Julian Padgett, Oliver Ray</i>	
Emergence of Norms in Interactions with Complex Rewards .....	2280
<i>Dhaminda B. Abeywickrama, Nathan Griffiths, Zhou Xu, Alex Mouzakitis</i>	

## **POSTER SESSION I**

Evaluating a Mechanism for Explaining BDI Agent Behaviour .....	2283
<i>Michael Winikoff, Galina Sidorenko</i>	
Learning Manner of Execution from Partial Corrections .....	2286
<i>Mattias Appelgren, Alex Lascarides</i>	
What Do You Care About: Inferring Values from Emotions .....	2289
<i>Jieting Luo, Mehdi Dastani, Thomas Studer; Beishui Liao</i>	
Why didn't you allocate this task to them? Negotiation-Aware Explicable Task Allocation and Contrastive Explanation Generation .....	2292
<i>Zahra Zahedi, Sailik Sengupta, Subbarao Kambhampati</i>	
Explaining Agent Preferences and Behavior: Integrating Reward Decomposition and Contrastive Highlights .....	2295
<i>Yael Septon, Yotam Amitai, Ofra Amir</i>	
Explanation Styles for Trustworthy Autonomous Systems .....	2298
<i>David A. Robb, Xingkun Liu, Helen Hastie</i>	
Modeling the Interpretation of Animations to Help Improve Emotional Expression .....	2301
<i>Taissa Ribeiro, Ricardo Rodrigues, Carlos Martinho</i>	
Artificial Prediction Markets Present a Novel Opportunity for Human-AI Collaboration .....	2304
<i>Tatiana Chakravorti, Vaibhav Singh, Sarah Rajtmajer, Michael McLaughlin, Robert Fraleigh, Christopher Griffin, Anthony Kwasnica, David Pennock, C. Lee Giles</i>	
Causal Explanations for Sequential Decision Making Under Uncertainty .....	2307
<i>Sameer B. Nashed, Saaduddin Mahmud, Claudia V. Goldman, Shlomo Zilberstein</i>	
Hierarchical Reinforcement Learning with Human-AI Collaborative Sub-Goals Optimization .....	2310
<i>Haozhe Ma, Thanh Vinh Vo, Tze-Yun Leong</i>	

## VOLUME 4

Context-aware Agents based on Psychological Archetypes for Teamwork .....	2313
<i>Anupama Arukgoda, Erandi Lakshika, Michael Barlow, Kasun Gunawardana</i>	
Personalized Agent Explanations for Human-Agent Teamwork: Adapting Explanations to User Trust, Workload, and Performance .....	2316
<i>Ruben S. Verhagen, Mark A. Neerincx, Can Parlar, Marin Vogel, Myrthe L. Tielman</i>	
A Teachable Agent to Enhance Elderly's Ikigai .....	2319
<i>Ping Chen, Xinjia Yu, Su Fang Lim, Zhiqi Shen</i>	
Improving Human-Robot Team Performance with Proactivity and Shared Mental Models .....	2322
<i>Gwendolyn Edgar, Matthew McWilliams, Matthias Scheutz</i>	
Towards Explaining Sequences of Actions in Multi-Agent Deep Reinforcement Learning Models .....	2325
<i>Khaing Phyo Wai, Minghong Geng, Budhitama Subagja, Shubham Pateria, Ah-Hwee Tan</i>	
Learning Constraints From Human Stop-Feedback in Reinforcement Learning .....	2328
<i>Silvia Poletti, Alberto Testolin, Sebastian Tschiatschek</i>	
Goal Alignment: Re-analyzing Value Alignment Problems Using Human-Aware AI .....	2331
<i>Malek Mechergui, Sarath Sreedharan</i>	
Effectiveness of Teamwork-Level Interventions through Decision-Theoretic Reasoning in a Minecraft Search-and-Rescue Task .....	2334
<i>David V. Pynadath, Nikolos Gurney, Sarah Kenny, Rajay Kumar, Stacy C. Marsella, Haley Matuszak, Hala Mostafa, Pedro Sequeira, Volkan Ustun, Peggy Wu</i>	
Hierarchical Reinforcement Learning for Ad Hoc Teaming .....	2337
<i>Stéphane Aroca-Ouellette, Miguel Aroca-Ouellette, Upasana Biswas, Katharina Kann, Alessandro Roncone</i>	
Asynchronous Communication Aware Multi-Agent Task Allocation .....	2340
<i>Ben Rachmut, Sofia Amador Nelke, Roie Zivan</i>	
Towards Robust Contrastive Explanations for Human-Neural Multi-agent Systems .....	2343
<i>Francesco Leofante, Alessio Lomuscio</i>	
Visual Explanations for Defence in Abstract Argumentation .....	2346
<i>Sylvie Doutre, Théo Duchatelle, Marie-Christine Lagasquie-Schiex</i>	
Minimising Task Tardiness for Multi-Agent Pickup and Delivery .....	2349
<i>Saravanan Ramanathan, Yihao Liu, Xueyan Tang, Wentong Cai, Jingning Li</i>	
Probabilistic Deduction as a Probabilistic Extension of Assumption-based Argumentation .....	2352
<i>Xiuyi Fan</i>	
Bayes-Adaptive Monte-Carlo Planning for Type-Based Reasoning in Large Partially Observable, Multi-Agent Environments .....	2355
<i>Jonathon Schwartz, Hanna Kurniawati</i>	
Blame Attribution for Multi-Agent Pathfinding Execution Failures .....	2358
<i>Avraham Natan, Roni Stern, Meir Kalech</i>	

A Semantic Approach to Decidability in Epistemic Planning .....	2361
<i>Alessandro Burigana, Paolo Felli, Marco Montali, Nicolas Troquard</i>	
Forward-PECVaR Algorithm: Exact Evaluation for CVaR SSPs .....	2364
<i>Willy Arthur Silva Reis, Denis Benevolo Pais, Valdinei Freire, Karina Valdivia Delgado</i>	
Explainable Ensemble Classification Model based on Argumentation .....	2367
<i>Nadia Abchiche-Mimouni, Leila Amgoud, Farida Zehraoui</i>	
Updating Action Descriptions and Plans for Cognitive Agents .....	2370
<i>Peter Stringer, Rafael C. Cardoso, Clare Dixon, Michael Fisher, Louise A. Dennis</i>	
Argument-based Explanation Functions .....	2373
<i>Leila Amgoud, Philippe Muller, Henri Trenquier</i>	
A Formal Framework for Deceptive Topic Planning in Information-Seeking Dialogues .....	2376
<i>Andreas Bränström, Virginia Dignum, Juan Carlos Nieves</i>	
Memoryless Adversaries in Imperfect Information Games .....	2379
<i>Dhananjay Raju, Georgios Bakirtzis, Ufuk Topcu</i>	
Bounded and Unbounded Verification of RNN-Based Agents in Non-deterministic Environments .....	2382
<i>Mehran Hosseini, Alessio Lomuscio</i>	
Methods and Mechanisms for Interactive Novelty Handling in Adversarial Environments .....	2385
<i>Tung Thai, Mudit Verma, Utkarsh Soni, Sriram Gopalakrishnan, Ming Shen, Mayank Garg, Ayush Kalani, Nakul Vaidya, Neeraj Varshney, Chitta Baral, Subbarao Kambhampati, Jivko Sinapov, Matthias Scheutz</i>	
One-Shot Learning from a Demonstration with Hierarchical Latent Language .....	2388
<i>Nathaniel Weir, Xingdi Yuan, Marc-Alexandre Côté, Matthew Hausknecht, Romain Laroche, Ida Momennejad, Harm Van Seijen, Benjamin Van Durme</i>	
Emergent Compositional Concept Communication through Mutual Information in Multi-Agent Teams .....	2391
<i>Seth Karten, Siva Kailas, Katia Sycara</i>	
Reasoning about Uncertainty in AgentSpeak using Dynamic Epistemic Logic .....	2394
<i>Michael Vezina, François Schwarzentruber, Babak Esfandiari, Sandra Morley</i>	
Towards Optimal and Scalable Evacuation Planning Using Data-driven Agent Based Models .....	2397
<i>Kazi Ashik Islam, Da Qi Chen, Madhav Marathe, Henning Mortveit, Samarth Swarup, Anil Vullikanti</i>	
Intention Progression with Maintenance Goals .....	2400
<i>Di Wu, Yuan Yao, Natasha Alechina, Brian Logan, John Thangarajah</i>	
Safety Guarantees in Multi-agent Learning via Trapping Regions .....	2403
<i>Aleksander Czechowski, Frans A. Oliehoek</i>	
Multi-Team Fitness Critics For Robust Teaming .....	2406
<i>Joshua Cook, Tristan Scheiner, Kagan Tumer</i>	
Multi-Agent Deep Reinforcement Learning for High-Frequency Multi-Market Making .....	2409
<i>Pankaj Kumar</i>	

TA-Explore: Teacher-Assisted Exploration for Facilitating Fast Reinforcement Learning .....	2412
<i>Ali Beikmohammadi, Sindri Magnússon</i>	
Which way is 'right'? Uncovering limitations of Vision-and-Language Navigation Models .....	2415
<i>Meera Hahn, Amit Raj, James M. Rehg</i>	
Learning Individual Difference Rewards in Multi-Agent Reinforcement Learning .....	2418
<i>Chen Yang, Guangkai Yang, Junge Zhang</i>	
TiLD: Third-person Imitation Learning by Estimating Domain Cognitive Differences of Visual Demonstrations .....	2421
<i>Zixuan Chen, Wenbin Li, Yang Gao, Yiyu Chen</i>	
Off-Beat Multi-Agent Reinforcement Learning .....	2424
<i>Wei Qiu, Weixun Wang, Rundong Wang, Bo An, Yujing Hu, Svetlana Obraztsova, Zinovi Rabinovich, Jianye Hao, Yingfeng Chen, Changjie Fan</i>	
AJAR: An Argumentation-based Judging Agents Framework for Ethical Reinforcement Learning .....	2427
<i>Benoît Alcaraz, Olivier Boissier, Rémy Chaput, Christopher Leturc</i>	
Never Worse, Mostly Better: Stable Policy Improvement in Deep Reinforcement Learning .....	2430
<i>Pranav Khanna, Guy Tennenholz, Nadav Merlis, Shie Mannor, Chen Tessler</i>	
Selectively Sharing Experiences Improves Multi-Agent Reinforcement Learning .....	2433
<i>Matthias Gerstgrasser, Tom Danino, Sarah Keren</i>	
The Challenge of Redundancy on Multi-agent Value Factorisation .....	2436
<i>Siddarth Shandep Singh, Benjamin Rosman</i>	
Robust Ordinal Regression for Collaborative Preference Learning with Opinion Synergies .....	2439
<i>Hugo Gilbert, Mohamed Ouaguenouni, Meltem Öztürk, Olivier Spanjaard</i>	
Off-the-Grid MARL: Datasets and Baselines for Offline Multi-Agent Reinforcement Learning .....	2442
<i>Claude Formanek, Asad Jeewa, Jonathan Shock, Arnu Pretorius</i>	
Search-Improved Game-Theoretic Multiagent Reinforcement Learning in General and Negotiation Games .....	2445
<i>Zun Li, Marc Lanctot, Kevin R. McKee, Luke Marris, Ian Gemp, Daniel Hennes, Kate Larson, Yoram Bachrach, Michael P. Wellman, Paul Muller</i>	
Grey-box Adversarial Attack on Communication in Multi-agent Reinforcement Learning .....	2448
<i>Xiao Ma, Wu-Jun Li</i>	
Reward-Machine-Guided, Self-Paced Reinforcement Learning .....	2451
<i>Cevahir Koprulu, Ufuk Topcu</i>	
Centralized Cooperative Exploration Policy for Continuous Control Tasks .....	2454
<i>Chao Li, Chen Gong, Qiang He, Xinwen Hou, Yu Liu</i>	
Do As You Teach: A Multi-Teacher Approach to Self-Play in Deep Reinforcement Learning .....	2457
<i>Chaitanya Kharyal, Tanmay Sinha, Sai Krishna Gottipati, Fatemeh Abdollahi, Srijita Das, Matthew E. Taylor</i>	
PORTAL: Automatic Curricula Generation for Multiagent Reinforcement Learning .....	2460
<i>Jizhou Wu, Tianpei Yang, Xiaotian Hao, Jianye Hao, Yan Zheng, Weixun Wang, Matthew E. Taylor</i>	

AI-driven Prices for Externalities and Sustainability in Production Markets .....	2463
<i>Panayiotis Danassis, Aris Filos-Ratsikas, Haipeng Chen, Milind Tambe, Boi Faltings</i>	
For One and All: Individual and Group Fairness in the Allocation of Indivisible Goods .....	2466
<i>Jonathan Scarlett, Nicholas Teh, Yair Zick</i>	
Matching Algorithms under Diversity-Based Reservations .....	2469
<i>Haris Aziz, Sean Morota Chu, Zhaohong Sun</i>	
Social Mechanism Design: A Low-Level Introduction .....	2472
<i>Ben Abramowitz, Nicholas Mattei</i>	
Online 2-stage Stable Matching .....	2475
<i>Evripidis Bampis, Bruno Escoffier, Paul Youssef</i>	
Strategic Play By Resource-Bounded Agents in Security Games .....	2478
<i>Xinming Liu, Joseph Y. Halpern</i>	
Neural Stochastic Agent-Based Limit Order Book Simulation: A Hybrid Methodology .....	2481
<i>Zijian Shi, John Cartlidge</i>	
Regularization for Strategy Exploration in Empirical Game-Theoretic Analysis .....	2484
<i>Yongzhao Wang, Michael P. Wellman</i>	
A Scalable Opponent Model Using Bayesian Learning for Automated Bilateral Multi-Issue Negotiation .....	2487
<i>Shengbo Chang, Katsuhide Fujita</i>	

## **POSTER SESSION II**

Benchmarking Robustness and Generalization in Multi-Agent Systems: A Case Study on Neural MMO .....	2490
<i>Yangkun Chen, Joseph Suarez, Junjie Zhang, Chenghui Yu, Bo Wu, Hanmo Chen, Hengman Zhu, Rui Du, Shanliang Qian, Shuai Liu, Weijun Hong, Jinke He, Yibing Zhang, Liang Zhao, Clare Zhu, Julian Togelius, Sharada Mohanty, Jiaxin Chen, Xiu Li, Xiaolong Zhu, Phillip Isola</i>	
SE4AI Issues on Designing a Social Media Agent: Agile Use Case Design for Behavioral Game Theory .....	2493
<i>Francisco S. Marcondes, José João Almeida, Paulo Novais</i>	
Modeling Application Scenarios for Responsible Autonomy using Computational Transcendence .....	2496
<i>Jayati Deshmukh, Nikitha Adivi, Srinath Srinivasa</i>	
Domain-Expert Configuration of Hypermedia Multi-Agent Systems in Industrial Use Cases .....	2499
<i>Jérémie Lemée, Samuele Burattini, Simon Mayer, Andrei Ciortea</i>	
Multi-Agent Reinforcement Learning for Fast-Timescale Demand Response of Residential Loads .....	2502
<i>Vincent Mai, Philippe Maisonneuve, Tianyu Zhang, Hadi Nekoei, Liam Paull, Antoine Lesage-Landry</i>	
The Swiss Gambit .....	2505
<i>Ágnes Cseh, Pascal Führlich, Pascal Lenzner</i>	
An Adversarial Strategic Game for Machine Learning as a Service using System Features .....	2508
<i>Guoxin Sun, Tansu Alpcan, Seyit Camtepe, Andrew C. Cullen, Benjamin I.P. Rubinstein</i>	

Optimizing Crop Management with Reinforcement Learning and Imitation Learning .....	2511
<i>Ran Tao, Pan Zhao, Jing Wu, Nicolas F. Martin, Matthew T. Harrison, Carla Ferreira, Zahra Kalantari, Naira Hovakimyan</i>	
A Novel Aggregation Framework for the Efficient Integration of Distributed Energy Resources in the Smart Grid .....	2514
<i>Stavros Orfanoudakis, Georgios Chalkiadakis</i>	
Near Optimal Strategies for Honeypots Placement in Dynamic and Large Active Directory Networks .....	2517
<i>Huy Q. Ngo, Mingyu Guo, Hung Nguyen</i>	
A Novel Demand Response Model and Method for Peak Reduction in Smart Grids - PowerTAC .....	2520
<i>Sanjay Chandlekar, Arthik Boroju, Shweta Jain, Sujit Gujar</i>	
Shopping Assistance for Everyone: Dynamic Query Generation On a Semantic Digital Twin As a Basis for Autonomous Shopping Assistance .....	2523
<i>Michaela Kümpel, Jonas Dech, Alina Hawkin, Michael Beetz</i>	
Counterfactually Fair Dynamic Assignment: A Case Study on Policing .....	2526
<i>Tasfia Mashiat, Xavier Gitiaux, Huzeifa Rangwala, Sanmay Das</i>	
A Cloud-Based Solution for Multi-Agent Traffic Control Systems .....	2529
<i>Chikadibia Ihejimba, Behnan Torabi, Rym Z. Wenkstern</i>	
Balancing Fairness and Efficiency in Transport Network Design through Reinforcement Learning .....	2532
<i>Dimitris Michailidis, Sennay Ghebreab, Fernando P. Santos</i>	
From Abstractions to Grounded Languages for Robust Coordination of Task Planning Robots .....	2535
<i>Yu Zhang</i>	
Idleness Estimation for Distributed Multiagent Patrolling Strategies .....	2538
<i>Mehdi William Othmani-Guibourg, Jean-Loup Farges, Amal El Fallah Seghrouchni</i>	
Simpler rather than Challenging: Design of Non-Dyadic Human-Robot Collaboration to Mediate Human-Human Concurrent Tasks .....	2541
<i>Francesco Semeraro, Jon Carberry Ltd.), Angelo Cangelosi</i>	
Learning to Self-Reconfigure for Freeform Modular Robots via Altruism Multi-Agent Reinforcement Learning .....	2544
<i>Lei Wu, Bin Guo, Qiuyun Zhang, Zhusuo Sun, Jieyi Zhang, Zhiwen Yu</i>	
Learning Multiple Tasks with Non-stationary Interdependencies in Autonomous Robots .....	2547
<i>Alejandro Romero, Gianluca Baldassarre, Richard J. Duro, Vieri Giuliano Santucci</i>	
Provably Manipulable 3D Structures using Graph Theory .....	2550
<i>John Harwell, London Lowmanstone, Maria Gini</i>	
HoLA Robots: Mitigating Plan-Deviation Attacks in Multi-Robot Systems with Co-Observations and Horizon-Limiting Announcements .....	2553
<i>Kacper Wardega, Max von Hippel, Roberto Tron, Cristina Nita-Rotaru, Wenchao Li</i>	
Online Re-Planning and Adaptive Parameter Update for Multi-Agent Path Finding with Stochastic Travel Times .....	2556
<i>Atsuyoshi Kita, Nobuhiro Suenari, Masashi Okada, Tadahiro Taniguchi</i>	

RTransNav:Relation-wise Transformer Network for More Successful Object Goal Navigation .....	2559
<i>Kang Zhou, Chi Guo, Huyin Zhang, Wenfei Guo</i>	
Multi-Agent Pickup and Delivery in Presence of Another Team of Robots .....	2562
<i>Benedetta Flammini, Davide Azzalini, Francesco Amigoni</i>	
Reward Relabelling for Combined Reinforcement and Imitation Learning on Sparse-reward Tasks .....	2565
<i>Jesús Bujalance, Fabien Moutarde</i>	
Connectivity Enhanced Safe Neural Network Planner for Lane Changing in Mixed Traffic .....	2568
<i>Xiangguo Liu, Ruochen Jiao, Bowen Zheng, Dave Liang, Qi Zhu</i>	
Bringing Diversity to Autonomous Vehicles: An Interpretable Multi-vehicle Decision-making and Planning Framework .....	2571
<i>Licheng Wen, Pinlong Cai, Daocheng Fu, Song Mao, Yikang Li</i>	
Loss of Distributed Coverage Using Lazy Agents Operating Under Discrete, Local, Event-Triggered Communication .....	2574
<i>Edward Vickery, Aditya A. Paranjape</i>	
Multi-Agent Path Finding via Reinforcement Learning with Hybrid Reward .....	2577
<i>Cheng Zhao, Liansheng Zhuang, Haonan Liu, Yihong Huang, Jian Yang</i>	
Multi-Agent Pickup and Delivery with Task Probability Distribution .....	2580
<i>Andrea Di Pietro, Nicola Basilico, Francesco Amigoni</i>	
Minimally Constraining Line-of-Sight Connectivity Maintenance for Collision-free Multi-Robot Networks under Uncertainty .....	2583
<i>Yupeng Yang, Yiwei Lyu, Wenhao Luo</i>	
Multi-Agent Path Finding with Time Windows: Preliminary Results .....	2586
<i>Jianqi Gao, Qi Liu, Shiyu Chen, Kejian Yan, Xinyi Li, Yanjie Li</i>	
Two-Level Actor-Critic Using Multiple Teachers .....	2589
<i>Su Zhang, Srijita Das, Sriram Ganapathi Subramanian, Matthew E. Taylor</i>	
Provably Efficient Offline RL with Options .....	2592
<i>Xiaoyan Hu, Ho-fung Leung</i>	
Learning to Perceive in Deep Model-Free Reinforcement Learning .....	2595
<i>Gonçalo Querido, Alberto Sardinha, Francisco S. Melo</i>	
SCRIMP: Scalable Communication for Reinforcement- and Imitation-Learning-Based Multi-Agent Pathfinding .....	2598
<i>Yutong Wang, Bairan Xiang, Shinan Huang, Guillaume Sartoretti</i>	
Learning Group-Level Information Integration in Multi-Agent Communication .....	2601
<i>Xiangrui Meng, Ying Tan</i>	
Learnability with PAC Semantics for Multi-agent Beliefs .....	2604
<i>Ionela G. Mocanu, Vaishak Belle, Brendan Juba</i>	
Improving Cooperative Multi-Agent Exploration via Surprise Minimization and Social Influence Maximization .....	2607
<i>Mingyang Sun, Yaqing Hou, Jie Kang, Haiyin Piao, Yifeng Zeng, Hongwei Ge, Qiang Zhang</i>	

Learning to Operate in Open Worlds by Adapting Planning Models .....	2610
<i>Wiktor Piotrowski, Roni Stern, Yoni Sher, Jacob Le, Matthew Klenk, Johan deKleer, Shiwali Mohan</i>	
End-to-End Optimization and Learning for Multiagent Ensembles .....	2613
<i>James Kotary, Vincenzo Di Vito, Ferdinando Fioretto</i>	
Optimal Decoy Resource Allocation for Proactive Defense in Probabilistic Attack Graphs .....	2616
<i>Haoxiang Ma, Shuo Han, Nandi Leslie, Charles Kamhoua, Jie Fu</i>	
Referential Communication in Heterogeneous Communities of Pre-trained Visual Deep Networks .....	2619
<i>Matéo Mahaut, Francesca Franzon, Roberto Dessim, Marco Baroni</i>	
A Learning Approach to Complex Contagion Influence Maximization .....	2622
<i>Haipeng Chen, Bryan Wilder, Wei Qiu, Bo An, Eric Rice, Milind Tambe</i>	
Analyzing the Sensitivity to Policy-Value Decoupling in Deep Reinforcement Learning Generalization .....	2625
<i>Nasik Muhammad Nafis, Raja Farrukh Ali, William Hsu</i>	
Reinforcement Learning with Depreciating Assets .....	2628
<i>Taylor Dohmen, Ashutosh Trivedi</i>	
Matching Options to Tasks using Option-Indexed Hierarchical Reinforcement Learning .....	2631
<i>Kushal Chauhan, Soumya Chatterjee, Akash Reddy, Aniruddha S. Balaraman Ravindran, Pradeep Shenoy</i>	
DGPO: Discovering Multiple Strategies with Diversity-Guided Policy Optimization .....	2634
<i>Wenze Chen, Shiyu Huang, Yuan Chiang, Ting Chen, Jun Zhu</i>	
Accelerating Neural MCTS Algorithms using Neural Sub-Net Structures .....	2637
<i>Prashank Kadam, Ruiyang Xu, Karl Lieberherr</i>	
Provably Efficient Convergence of Primal-Dual Actor-Critic with Nonlinear Function Approximation .....	2640
<i>Jing Dong, Li Shen, Yinggan Xu, Baoxiang Wang</i>	
Achieving Near-optimal Regrets in Confounded Contextual Bandits .....	2643
<i>Xueping Gong, Jiheng Zhang</i>	
Proportional Fairness in Obnoxious Facility Location .....	2646
<i>Haris Aziz, Alexander Lam, Bo Li, Fahimeh Ramezani, Toby Walsh</i>	
Distortion in Attribute Approval Committee Elections .....	2649
<i>Dorothea Baumeister, Linus Boes</i>	
Relaxations of Envy-Freeness Over Graphs .....	2652
<i>Justin Payan, Rik Sengupta, Vignesh Viswanathan</i>	
Fairly Allocating (Contiguous) Dynamic Indivisible Items with Few Adjustments .....	2655
<i>Mingwei Yang</i>	
Measuring a Priori Voting Power - Taking Delegations Seriously .....	2658
<i>Rachael Colley, Théo Demazure, Hugo Gilbert</i>	
Sampling-Based Winner Prediction in District-Based Elections .....	2661
<i>Debjayoti Kar, Palash Dey, Swagato Sanyal</i>	

Cedric: A Collaborative DDoS Defense System Using Credit .....	2664
<i>Jiawei Li, Hui Wang, Jilong Wang</i>	
Social Aware Coalition Formation with Bounded Coalition Size .....	2667
<i>Chaya Levinger, Amos Azaria, Noam Hazon</i>	
Repeatedly Matching Items to Agents Fairly and Efficiently .....	2670
<i>Ioannis Caragiannis, Shivika Narang</i>	
The Complexity of Minimizing Envy in House Allocation .....	2673
<i>Jayakrishnan Madathil, Neeldhara Misra, Aditi Sethia</i>	
Error in the Euclidean Preference Model .....	2676
<i>Luke Thorburn, Maria Polukarov, Carmine Ventre</i>	
Distance Hypergraph Polymatrix Coordination Games .....	2679
<i>Alessandro Aloisio</i>	
Search versus Search for Collapsing Electoral Control Types .....	2682
<i>Benjamin Carleton, Michael C. Chavrimootoo, Lane A. Hemaspaandra, David E. Narváez, Conor Taliancich, Henry B. Welles</i>	
Does Delegating Votes Protect Against Pandering Candidates? .....	2685
<i>Xiaolin Sun, Jacob Masur, Ben Abramowitz, Nicholas Mattei, Zizhan Zheng</i>	
Resilient Fair Allocation of Indivisible Goods .....	2688
<i>Dolev Mutzari, Yonatan Aumann, Sarit Kraus</i>	
Stability of Weighted Majority Voting under Estimated Weights .....	2691
<i>Shaojie Bai, Dongxia Wang, Tim Muller, Peng Cheng, Jiming Chen</i>	
Indivisible Participatory Budgeting with Multiple Degrees of Sophistication of Projects .....	2694
<i>Gogulapati Sreedurga</i>	
Incentivizing Sequential Crowdsourcing Systems .....	2697
<i>Yuan Luo</i>	
No-regret Learning Dynamics for Sequential Correlated Equilibria .....	2700
<i>Hugh Zhang</i>	
Fair Pricing for Time-Flexible Smart Energy Markets .....	2703
<i>Roland Saur, Han La Poutré, Neil Yorke-Smith</i>	
Budget-Feasible Mechanism Design for Cost-Benefit Optimization in Gradual Service Procurement .....	2706
<i>Farzaneh Farhadi, Maria Chli, Nicholas R. Jennings</i>	
Analysis of a Learning Based Algorithm for Budget Pacing .....	2709
<i>MohammadTaghi Hajiaghayi, Max Springer</i>	
Finding Optimal Nash Equilibria in Multiplayer Games via Correlation Plans .....	2712
<i>Youzhi Zhang, Bo An, V.S. Subrahmanian</i>	
Diffusion Multi-unit Auctions with Diminishing Marginal Utility Buyers .....	2715
<i>Haolin Liu, Xinyuan Lian, Dengji Zhao</i>	

Improving Quantal Cognitive Hierarchy Model Through Iterative Population Learning .....	2718
<i>Yuhong Xu, Shih-Fen Cheng, Xinyu Chen</i>	
A Nash-Bargaining-Based Mechanism for One-Sided Matching Markets and Dichotomous Utilities .....	2721
<i>Jugal Garg, Thorben Tröbst, Vijay V. Vazirani</i>	
Differentially Private Diffusion Auction: The Single-unit Case .....	2724
<i>Fengjuan Jia, Mengxiao Zhang, Jiamou Liu, Bakh Khoussainov</i>	
Learning in Teams: Peer Evaluation for Fair Assessment of Individual Contributions .....	2727
<i>Fedor Duzhin</i>	

### **POSTER SESSION III**

Agent-based Simulation of District-based Elections with Heterogeneous Populations .....	2730
<i>Adway Mitra</i>	
Deep Learning-based Spatially Explicit Emulation of an Agent-Based Simulator for Pandemic in a City .....	2733
<i>Varun Madhavan, Adway Mitra, Partha Pratim Chakrabarti</i>	
A Decentralized Agent-Based Task Scheduling Framework for Handling Uncertain Events in Fog Computing .....	2736
<i>Yikun Yang, Fenghui Ren, Minjie Zhang</i>	
Co-evolution of Social and Non-social Guilt in Structured Populations .....	2739
<i>Theodor Cimpeanu, Luís Moniz Pereira, The Anh Han</i>	
Phantom - A RL-driven Multi-Agent Framework to Model Complex Systems .....	2742
<i>Leo Ardon, Jared Vann, Deepeka Garg, Thomas Spooner, Sumitra Ganesh</i>	
Simulation Model with Side Trips at a Large-Scale Event .....	2745
<i>Ryo Niwa, Shunki Takami, Shusuke Shigenaka, Masaki Onishi, Wataru Naito, Tetsuo Yasutaka</i>	
The Price of Algorithmic Pricing: Investigating Collusion in a Market Simulation with AI Agents .....	2748
<i>Michael Schlechtinger, Damaris Kosack, Heiko Paulheim, Thomas Fetzer, Franz Krause</i>	
Crowd Simulation Incorporating a Route Choice Model and Similarity Evaluation using Real Large-scale Data .....	2751
<i>Ryo Nishida, Masaki Onishi, Koichi Hashimoto</i>	
Capturing Hiders with Moving Obstacles .....	2754
<i>Ayushman Panda, Kamalakar Karlapalem</i>	
COBAI : A Generic Agent-based Model of Human Behaviors Centered on Contexts and Interactions .....	2757
<i>Maëlle Beuret, Irène Foucherot, Christian Gentil, Joël Savelli</i>	
Learning Solutions in Large Economic Networks using Deep Multi-Agent Reinforcement Learning .....	2760
<i>Michael Curry, Alexander Trott, Soham Phade, Yu Bai, Stephan Zheng</i>	
Opinion Dynamics in Populations of Converging and Polarizing Agents .....	2763
<i>Anshul Toshniwal, Fernando P. Santos</i>	

On a Voter Model with Context-Dependent Opinion Adoption .....	2766
<i>Luca Becchetti, Vincenzo Bonifaci, Emilio Cruciani, Francesco Pasquale</i>	
Cognitive Bias-Aware Dissemination Strategies for Opinion Dynamics with External Information Sources .....	2769
<i>Abdullah Al Maruf, Luyao Niu, Bhaskar Ramasubramanian, Andrew Clark, Radha Poovendran</i>	
Feature-based Individual Fairness in k-clustering .....	2772
<i>Debjayoti Kar, Mert Kosan, Debmalya Mandal, Sourav Medya, Arlei Silva, Palash Dey, Swagato Sanyal</i>	
Fair Facility Location for Socially Equitable Representation .....	2775
<i>Helen Sternbach, Sara Cohen</i>	
S&F: Sources and Facts Reliability Evaluation Method .....	2778
<i>Quentin Elsaesser, Patricia Everaere, Sébastien Konieczny</i>	
Offline Multi-Agent Reinforcement Learning with Coupled Value Factorization .....	2781
<i>Xiangsen Wang, Xianyuan Zhan</i>	
Learning Optimal "Pigovian Tax" in Sequential Social Dilemmas .....	2784
<i>Yun Hua, Shang Gao, Wenhao Li, Bo Jin, Xiangfeng Wang, Hongyuan Zha</i>	
PACCART: Reinforcing Trust in Multiuser Privacy Agreement Systems .....	2787
<i>Daan Di Scala, Pinar Yolum</i>	
Explain to Me: Towards Understanding Privacy Decisions .....	2790
<i>Gonul Ayci, Arzucan Özgür, Murat Şensoy, Pinar Yolum</i>	
The Resilience Game: A New Formalization of Resilience for Groups of Goal-Oriented Autonomous Agents .....	2792
<i>Michael A. Goodrich, Jennifer Leaf, Julie A. Adams, Matthias Scheutz</i>	
Differentially Private Network Data Collection for Influence Maximization .....	2795
<i>M. Amin Rahimian, Fang-Yi Yu, Carlos Hurtado</i>	
Inferring Implicit Trait Preferences from Demonstrations of Task Allocation in Heterogeneous Teams .....	2798
<i>Vivek Mallampati, Harish Ravichandar</i>	
From Scripts to RL Environments: Towards Imparting Commonsense Knowledge to RL Agents .....	2801
<i>Abhinav Joshi, Areeb Ahmad, Umang Pandey, Ashutosh Modi</i>	
Hierarchical Reinforcement Learning with Attention Reward .....	2804
<i>Sihong Luo, Jinghao Chen, Zheng Hu, Chunhong Zhang, Benhui Zhuang</i>	
Towards Multi-agent Learning of Causal Networks .....	2807
<i>Stefano Mariani, Pasquale Roseti, Franco Zambonelli</i>	
FedHQL: Federated Heterogeneous Q-Learning .....	2810
<i>Flint Xiaofeng Fan, Yining Ma, Zhongxiang Dai, Cheston Tan, Bryan Kian Hsiang Low</i>	
Know Your Enemy: Identifying and Adapting to Adversarial Attacks in Deep Reinforcement Learning .....	2813
<i>Seán Caulfield Curley, Karl Mason, Patrick Mannion</i>	

Transformer Actor-Critic with Regularization: Automated Stock Trading using Reinforcement Learning .....	2815
<i>Namyeong Lee, Jun Moon</i>	
Model-Based Actor-Critic for Multi-Objective Reinforcement Learning with Dynamic Utility Functions .....	2818
<i>Johan Källström, Fredrik Heintz</i>	
Relaxed Exploration Constrained Reinforcement Learning .....	2821
<i>Shahaf S. Shperberg, Bo Liu, Peter Stone</i>	
Causality Detection for Efficient Multi-Agent Reinforcement Learning .....	2824
<i>Rafael Pina, Varuna De Silva, Corentin Artaud</i>	
Diversity Through Exclusion (DTE): Niche Identification for Reinforcement Learning through Value-Decomposition .....	2827
<i>Peter Sunehag, Alexander Sasha Vezhnevets, Edgar A. Duéñez-Guzmán, Igor Mordatch, Joel Z. Leibo</i>	
Temporally Layered Architecture for Adaptive, Distributed and Continuous Control .....	2830
<i>Devdhar Patel, Joshua Russell, Francesca Walsh, Tauhidur Rahman, Terrence Sejnowski, Hava Siegelmann</i>	
Multi-objective Reinforcement Learning in Factored MDPs with Graph Neural Networks .....	2833
<i>Marc Vincent, Amal El Fallah Seghrouchni, Vincent Corruble, Narayan Bernardin, Rami Kassab, Frédéric Barbaresco</i>	
An Analysis of Connections Between Regret Minimization and Actor Critic Methods in Cooperative Settings .....	2836
<i>Chirag Chhablani, Ian A. Kash</i>	
Attention-Based Recurrency for Multi-Agent Reinforcement Learning under State Uncertainty .....	2839
<i>Thomy Phan, Fabian Ritz, Jonas Nüßlein, Michael Kölle, Thomas Gabor, Claudia Linnhoff-Popien</i>	
A Theory of Mind Approach as Test-Time Mitigation Against Emergent Adversarial Communication .....	2842
<i>Nancirose Piazza, Vahid Behzadan</i>	
Defensive Collaborative Learning: Protecting Objective Privacy in Data Sharing .....	2845
<i>Cynthia Huang, Pascal Poupart</i>	
Neuro-Symbolic World Models for Adapting to Open World Novelty .....	2848
<i>Jonathan C. Balloch, Zhiyu Lin, Xiangyu Peng, Mustafa Hussain, Aarun Srinivas, Robert Wright, Julia M. Kim, Mark O. Riedl</i>	
Modeling Dynamic Environments with Scene Graph Memory .....	2851
<i>Andrey Kurenkov, Michael Lingelbach, Tanmay Agarwal, Chengshu Li, Emily Jin, Ruohan Zhang, Li Fei-Fei, Jiajun Wu, Silvio Savarese, Roberto Martín-Martín</i>	
Group Fair Clustering Revisited -- Notions and Efficient Algorithm .....	2854
<i>Shivam Gupta, Ganesh Ghalme, Narayanan C. Krishnan, Shweta Jain</i>	
LTL-Based Non-Markovian Inverse Reinforcement Learning .....	2857
<i>Mohammad Afzal, Sankalp Gambhir, Ashutosh Gupta, Krishna S, Ashutosh Trivedi, Alvaro Velasquez</i>	

The Parameterized Complexity of Welfare Guarantees in Schelling Segregation .....	2860
<i>Argyrios Deligkas, Eduard Eiben, Tiger-Lily Goldsmith</i>	
Fair Chore Division under Binary Supermodular Costs .....	2863
<i>Siddharth Barman, Vishnu Narayan, Paritosh Verma</i>	
Deliberation as Evidence Disclosure: A Tale of Two Protocol Types .....	2866
<i>Julian Chingoma, Adrian Haret</i>	
How Does Fairness Affect the Complexity of Gerrymandering? .....	2869
<i>Sandip Banerjee, Rajesh Chitnis, Abhiruk Lahiri</i>	
Individual-Fair and Group-Fair Social Choice Rules under Single-Peaked Preferences .....	2872
<i>Gogulapati Sreedurga, Soumyarup Sadhukhan, Souvik Roy, Yadati Narahari</i>	
Maximin Share Allocations for Assignment Valuations .....	2875
<i>Pooja Kulkarni, Rucha Kulkarni, Ruta Mehta</i>	
Computational Complexity of Verifying the Group No-show Paradox .....	2877
<i>Farhad Mohsin, Qishen Han, Sikai Ruan, Pin-Yu Chen, Francesca Rossi, Lirong Xia</i>	
Optimal Capacity Modification for Many-To-One Matching Problems .....	2880
<i>Jiehua Chen, Gergely Csáji</i>	
Learning to Explain Voting Rules .....	2883
<i>Inwon Kang, Qishen Han, Lirong Xia</i>	
MMS Allocations of Chores with Connectivity Constraints: New Methods and New Results .....	2886
<i>Mingyu Xiao, Guoliang Qiu, Sen Huang</i>	
Group Fairness in Peer Review .....	2889
<i>Haris Aziz, Evi Micha, Nisarg Shah</i>	
Altruism in Facility Location Problems .....	2892
<i>Houyu Zhou, Hau Chan, Minming Li</i>	
Transfer Learning based Agent for Automated Negotiation .....	2895
<i>Siqi Chen, Qisong Sun, Heng You, Tianpei Yang, Jianye Hao</i>	
Single-Peaked Jump Schelling Games .....	2899
<i>Tobias Friedrich, Pascal Lenzner, Louise Molitor, Lars Seifert</i>	
Defining Deception in Structural Causal Games .....	2902
<i>Francis Rhys Ward, Francesca Toni, Francesco Belardinelli</i>	
Game Model Learning for Mean Field Games .....	2905
<i>Yongzhao Wang, Michael P. Wellman</i>	
Modeling Robustness in Decision-Focused Learning as a Stackelberg Game .....	2908
<i>Sonja Johnson-Yu, Kai Wang, Jessie Finocchiaro, Aparna Taneja, Milind Tambe</i>	
Two-phase Security Games .....	2910
<i>Andrzej Nagórko, Paweł Ciosmak, Tomasz Michalak</i>	
Stationary Equilibrium of Mean Field Games with Congestion-dependent Sojourn Times .....	2913
<i>Costas Courcoubetis, Antonis Dimakis</i>	

Last-mile Collaboration: A Decentralized Mechanism with Performance Guarantees and its Implementation ..... <i>Keyang Zhang, Jose Javier Escribano Macias, Dario Paccagnan, Panagiotis Angeloudis</i>	2916
Deep Learning-Powered Iterative Combinatorial Auctions with Active Learning ..... <i>Benjamin Estermann, Stefan Kramer, Roger Wattenhofer, Ye Wang</i>	2919
Revenue Maximization Mechanisms for an Uninformed Mediator with Communication Abilities ..... <i>Zhikang Fan, Weiran Shen</i>	2922
<b><u>DOCTORAL CONSORTIUM</u></b>	
Counterfactual Explanations for Reinforcement Learning Agents ..... <i>Jasmina Gajcin</i>	2925
Bipartite Matching for Repeated Allocation Problems ..... <i>Yohai Trabelsi</i>	2928
Artificial Intelligence Algorithms for Strategic Reasoning over Complex Multiagent Systems ..... <i>Zun Li</i>	2931
Emergence of Cooperation on Networks ..... <i>Jacques Bara</i>	2934
Enhancing User Understanding of Reinforcement Learning Agents Through Visual Explanations ..... <i>Yotam Amitai</i>	2937
Algorithmic Fairness in Temporal Resource Allocation ..... <i>Ashwin Kumar</i>	2940
AI & Multi-agent Systems for Data-centric Epidemic Forecasting ..... <i>Alexander Rodríguez</i>	2943
Strategy Extraction for Transfer in AI Agents ..... <i>Archana Vadakattu</i>	2946
Multi-Advisor Dynamic Decision Making ..... <i>Zhaori Guo</i>	2949
Forward-Looking and Backward-Looking Responsibility Attribution in Multi-Agent Sequential Decision Making ..... <i>Stelios Triantafyllou</i>	2952
Coalition Formation in Sequential Decision-Making under Uncertainty ..... <i>Saar Cohen</i>	2955
Fine Grained Complexity of Fair and Efficient Allocations ..... <i>Aditi Sethia</i>	2958
Preference Inference from Demonstration in Multi-objective Multi-agent Decision Making ..... <i>Junlin Lu</i>	2961
Explanation through Dialogue for Reasoning Systems ..... <i>Yifan Xu</i>	2964

Logics for Information Aggregation .....	2967
<i>John Lindqvist</i>	
Towards Sample-Efficient Multi-Objective Reinforcement Learning .....	2970
<i>Lucas N. Alegre</i>	
Verifiably Safe Decision-Making for Autonomous Systems .....	2973
<i>Yi Yang</i>	
A Toolkit for Encouraging Safe Diversity in Skill Discovery .....	2976
<i>Maxence Hussonnois</i>	
Citizen Centric Demand Responsive Transport .....	2979
<i>Alexander Masterman</i>	
Safe Behavior Specification and Planning for Autonomous Robotic Systems in Uncertain Environments .....	2982
<i>Jan Vermaelen</i>	
Mechanism Design for Heterogeneous and Distributed Facility Location Problems .....	2985
<i>Rongsen Zhang</i>	
Reinforcement Learning and Mechanism Design for Routing of Connected and Autonomous Vehicles .....	2988
<i>Behrad Koohy</i>	
Uncertainty-aware Personal Assistant and Explanation Method for Privacy Decisions .....	2991
<i>Gönül Ayçi</i>	
Fair Transport Network Design using Multi-Agent Reinforcement Learning .....	2993
<i>Dimitris Michailidis</i>	
Towards Scalable and Robust Decision Making in Partially Observable, Multi-Agent Environments .....	2996
<i>Jonathon Schwartz</i>	
Reinforcement Learning in Multi-Objective Multi-Agent Systems .....	2999
<i>Willem Röpke</i>	
Characterizing Fairness in Societal Resource Allocation .....	3002
<i>Tasfia Mashiat</i>	
Learning Transferable Representations for Non-stationary Environments .....	3005
<i>Mohammad Samin Yasar</i>	
Effective Human-Machine Teaming through Communicative Autonomous Agents that Explain, Coach, and Convince .....	3008
<i>Aaquib Tabrez</i>	
Towards a Logical Account for Human-Aware Explanation Generation in Model Reconciliation Problems .....	3011
<i>Stylianos Loukas Vasileiou</i>	
Contests and Other Topics in Multi-Agent Systems .....	3014
<i>Abheek Ghosh</i>	

Planning and Coordination for Unmanned Aerial Vehicles .....	3017
<i>Jonathan Diller</i>	
Towards Creating Better Interactive Agents: Leveraging Both Implicit and Explicit Human Feedback .....	3020
<i>Kate Candon</i>	
Assistive Robotics for Empowering Humans with Visual Impairments to Independently Perform Day-to-day Tasks .....	3023
<i>Shivendra Agrawal</i>	
Separations and Collapses in Computational Social Choice .....	3026
<i>Michael C. Chavrimootoo</i>	
Emergent Responsible Autonomy in Multi-Agent Systems .....	3029
<i>Jayati Deshmukh</i>	
Learning Representations and Robust Exploration for Improved Generalization in Reinforcement Learning .....	3032
<i>Nasik Muhammad Nafi</i>	
Enhancing Smart, Sustainable Mobility with Game Theory and Multi-Agent Reinforcement Learning .....	3035
<i>Lucia Cipolina-Kun</i>	

## **DEMONSTRATIONS**

TDD for AOP: Test-Driven Development for Agent-Oriented Programming .....	3038
<i>Cleber Jorge Amaral, Jomi Fred Hübner, Timotheus Kampik</i>	
Interaction-Oriented Programming: Intelligent, Meaning-Based Multiagent Systems .....	3041
<i>Amit K. Chopra, Samuel H. Christie V, Munindar P. Singh</i>	
Improvement and Evaluation of the Policy Legibility in Reinforcement Learning .....	3044
<i>Yanyu Liu, Yifeng Zeng, Biyang Ma, Yinghui Pan, Huifan Gao, Xiaohan Huang</i>	
Multi-Robot Warehouse Optimization: Leveraging Machine Learning for Improved Performance .....	3047
<i>Mara Cairo, Bevin Eldaphonse, Payam Mousavi, Sahir, Sheikh Jubair, Matthew E. Taylor, Graham Doerksen, Nikolai Kummer, Jordan Maretzki, Gupreet Mohhar, Sean Murphy, Johannes Günther, Laura Petrich, Talat Syed</i>	
Robust JaCaMo Applications via Exceptions and Accountability .....	3050
<i>Matteo Baldoni, Cristina Baroglio, Roberto Micalizio, Stefano Tedeschi</i>	
A Web-based Tool for Detecting Argument Validity and Novelty .....	3053
<i>Sandrine Chausson, Ameer Saadat-Yazdi, Xue Li, Jeff Z. Pan, Vaishak Belle, Nadin Kökciyan, Björn Ross</i>	
Visualizing Logic Explanations for Social Media Moderation .....	3056
<i>Marc Roig Vilamala, Dave Braines, Federico Cerutti, Alun Preece</i>	
The Influence Maximisation Game .....	3059
<i>Sukankana Chakraborty, Sebastian Stein, Ananthram Swami, Matthew Jones, Lewis Hill</i>	
Demonstrating Performance Benefits of Human-Swarm Teaming .....	3062
<i>William Hunt, Jack Ryan, Ayodeji O. Abioye, Sarvapali D. Ramchurn, Mohammad D. Soorati</i>	

Hiking up that HILL with Cogment-Verse: Train & Operate Multi-agent Systems Learning from Humans .....	3065
<i>Sai Krishna Gottipati, Luong-Ha Nguyen, Clodéric Mars, Matthew E. Taylor</i>	

Real Time Gesturing in Embodied Agents for Dynamic Content Creation .....	3068
<i>Hazel Watson-Smith, Felix Marcon Swadel, Jo Hutton, Kirstin Marcon, Mark Sagar, Shane Blackett, Tiago Rebeiro, Travers Biddle, Tim Wu</i>	

#### **Author Index**