

ADT 2019

The 6th International Conference on Algorithmic Decision Theory

Fuqua School of Business, Duke University

Classroom H

October 25-27, 2019

Friday, October 25

8:30 Registration

9:00 Conference Welcome

9:15 Invited presentation (Session Chair: Saša Pekeč)

David Pennock: Surprising Applications of Wagering Mechanisms

10:15 Break

10:45 Information Elicitation and Aggregation (Session Chair: Dominik Peters)

10:45 Grzegorz Gawron and Piotr Faliszewski: Robustness of Approval-Based Multiwinner Voting Rules

11:25 Ons Nefla, Meltem Ozturk, Paolo Viappiani and Imène Brigui-Chtioui: Interactive Elicitation of a Majority Rule Sorting Model with Maximum Margin Optimization

12:05 Lunch

13:30 Mechanism Design and Games (Session Chair: David Pennock)

13:30 Roi Naveiro and David Ríos: Stochastic Gradient Methods for Solving Stackelberg Games

14:10 Aleksandr M. Kazachkov and Shai Vardi: On Tanking and Competitive Balance

14:50 Rupert Freeman, David Pennock, Dominik Peters and Jennifer Wortman Vaughan: Truthful Aggregation of Budget Proposals

15:30 Break

16:00 Tutorial

Lirong Xia: Learning and Decision-Making from Rank Data

18:00 Business meeting of EURO Working Group on Preference Handling

Saturday, October 26

9:00 *Invited presentation* (Session Chair: Vince Conitzer)

Ariel Procaccia: Putting Ethical AI to the Vote

10:00 Break

10:30 *Complexity and Voting* (Session Chair: Xudong Liu)

10:30 Neeldhara Misra: On the Parameterized Complexity of Party Nominations

11:10 Xudong Liu and Mirek Truszczynski: New Complexity Results on Aggregating Lexicographic Preference Trees Using Positional Scoring Rules

11:50 Lunch

13:00 *Applications* (Session Chair: Jörg Rothe)

13:00 Pascal Lange and Jörg Rothe: Optimizing Social Welfare in Social Networks

13:40 Arwa Khannoussi, Alexandru-Liviu Olteanu, Christophe Labreuche, Pritesh Narayan, Catherine Dezan, Jean-Philippe Diguët, Jacques Petit-Frère and Patrick Meyer: Integrating Operators' Preferences into Decisions of Unmanned Aerial Vehicles: Multi-layer Decision Engine and Incremental Preference Elicitation.

14:20 Benno Kuckuck, Jörg Rothe and Anke Weißenfeld. Refugee Allocation in the Setting of Hedonic Games

15:00 Break

15:30 *Voting* (Session Chair: Patrick Meyer)

15:30 Karsten Diekhoff, Michael Kirsten and Jonas Krämer: Formal Property-Oriented Design of Voting Rules Using Composable Modules

15:50 Piotr Faliszewski and Marija Slavkovic: The Complexity of Elections with Rational Actors

16:10 Gal Shahaf, Ehud Shapiro and Nimrod Talmon: Aggregation over Metric Spaces: Proposing and Voting in Elections, Budgeting, and Legislation

16:30 Arthur Valko, Alexandru-Liviu Olteanu and Patrick Meyer: Integrating Multiple Contexts into Multi-criteria Majority-rule Sorting

16:50 End of Saturday Program

18:30 Conference Dinner at JB Duke Hotel

Sunday, October 27

9:00 *Invited presentation* (Session Chair: Brent Venable)

Francesca Rossi: Voting for Ensemble Classifiers

10:00 Break

10:20 *Combinatorial Structures* (Session Chair: Rica Gonen)

10:20 Nawal Benabbou, Cassandre Leroy, Thibaut Lust and Patrice Perny: Combining Local Search and Elicitation for Multi-Objective Combinatorial Optimization

11:00 Rica Gonen and Anat Lerner: Towards Characterizing the Deterministic Combinatorial Constrained Efficient Space

11:40 Break

12:00 *Applications and Preference Structures* (Session Chair: Judy Goldsmith)

12:00 William Bailey, Judy Goldsmith, Brent Harrison and Siyao Xu: Approximating the Pareto Front of Bi-Criteria Kidney Exchanges

12:20 Michael Huelsman and Miroslaw Truszczynski: Approximating Dominance in CP-nets by Lexicographic Evaluation

12:40 Austin Taing, Judy Goldsmith and Justin Wedeking: Application of Boolean Logic to Natural Language Complexity in Political Discourse

13:00 End of conference

We want to thank ADT2019 Conference sponsors for their generous support:

- Computer Science Department, Duke University
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- EURO working group on Preference Handling