Andrzej Kaczmarczyk

Birth: 1.11.1991, Cieszyn, Poland
Citizenship: Polish
Website: www.akaczmarczyk.com
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Education

Ph.D. Computer Science 10/2016 – 12/2020
Technische Universität Berlin, Berlin, Germany

Thesis: *Algorithmic Aspects of Resource Allocation and Multiwinner Voting: Theory and Experiments*
Supervisor: Prof. Rolf Niedermeier (†)
Grade: distinction (summa cum laude)

M.Sc. Computer Science 03/2014 – 12/2015
AGH University of Science and Technology, Kraków, Poland

Thesis: *Algorithms for Destructive Shift Bribery*
Supervisor: Prof. Piotr Faliszewski
Grade: very good (GPA: 4.94/5.0)

B.Sc. Computer Science 10/2010 – 01/2014
AGH University of Science and Technology, Kraków, Poland

Thesis: *Document Annotation Systems for the Purposes of Strategic Analysis*
Supervisor: Prof. Aleksander Byrski
Grade: very good (GPA: 4.84/5.0)

Professional Experience

Postdoctoral Fellow 11/2021 – now
AGH University of Science and Technology, Kraków, Poland

Senior Operations Researcher 03/2021 – 11/2021
Sabre, Kraków, Poland

Research Assistant 10/2016 – 02/2021
Technische Universität Berlin, Berlin, Germany

Java Backend Developer 10/2015 – 10/2016
AGH University of Science and Technology, Kraków, Poland

Teaching Assistant 09/2015 – 01/2016
AGH University of Science and Technology, Kraków, Poland

Teaching Assistant Intern 09/2014 – 06/2015
AGH University of Science and Technology, Kraków, Poland

Publications

Authors are listed in alphabetical order and each of them contributed equally except for rare entries marked by •, where the first author's contribution was prevalent.

Journal Publications

J6 M. Bentert, R. Bredereck, P. Györgyi, A. Kaczmarczyk, and R. Niedermeier. "A Multivariate Complexity Analysis of the Material Consumption Scheduling Problem". In: *Journal of Scheduling* 26 (2023), 369–382.

J5 R. Bredereck, A. Kaczmarczyk, J. Luo, R. Niedermeier, and F. Sachse. “Improving Resource Allocations by Sharing in Pairs”. In: *Journal of Artificial Intelligence Research* 78 (2023), 1069–1109.

J4 R. Bredereck, A. Kaczmarczyk, and R. Niedermeier. “Envy-Free Allocations Respecting Social Networks”. In: *Artificial Intelligence* 305 (2022), 103664.

J3 R. Bredereck, P. Faliszewski, A. Kaczmarczyk, R. Niedermeier, P. Skowron, and N. Talmon. “Robustness Among Multiwinner Voting Rules”. In: *Artificial Intelligence* 290 (2021), 103403.

J2 R. Bredereck, A. Kaczmarczyk, and R. Niedermeier. “On Coalitional Manipulation for Multiwinner Elections: Shortlisting”. In: *Autonomous Agents and Multi-Agent Systems* 35.2 (2021), 38.

J1• A. Kaczmarczyk and P. Faliszewski. “Algorithms for Destructive Shift Bribery”. In: *Autonomous Agents and Multi-Agent Systems* 33.3 (2019), 275–297.

Conference Publications

C19 N. Boehmer, J.-Y. Cai, P. Faliszewski, A. Z. Fan,. Janeczko, A. Kaczmarczyk, and T. Ws. “Properties of Position Matrices and Their Election”. In: *Proceedings of the 37th AAAI Conference on Artificial Intelligence (AAAI ’23)*. 2023, 5507–5514.

C18 N. Boehmer, P. Faliszewski,. Janeczko, and A. Kaczmarczyk. “Robustness of Participatory Budgeting Outcomes: Complexity and Experiments”. In: *Proceedings of the 16th Symposium on Algorithmic Game Theory (SAGT ’23)*. 2023, 161–178.

C17 R. Bredereck, A. Kaczmarczyk, D. Knop, and R. Niedermeier. “High-Multiplicity Fair Allocation Using Parametric Integer Linear Programming”. In: *Proceedings of the 26th European Conference on Artificial Intelligence (ECAI ’23)*. 2023, 303–310.

C16 P. Faliszewski, A. Kaczmarczyk, K. Sornat, S. Szufa, and T. Ws. “Diversity, Agreement, and Polarization in Elections”. In: *Proceedings of the 32nd International Joint Conference on Artificial Intelligence (IJCAI ’23)*. 2023, 2864–2692.

C15• B. Kusek, R. Bredereck, P. Faliszewski, A. Kaczmarczyk, and D. Knop. “Bribery Can Get Harder in Structured Multiwinner Approval Election”. In: *Proceedings of the 22th International Conference on Autonomous Agents & Multiagent Systems (AAMAS ’23)*. 2023, 1725–1733.

C14 R. Bredereck, T. Fluschnik, and A. Kaczmarczyk. “When Votes Change and Committees Should (Not)”. In: *Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI ’22)*. 2022, 144–150.

C13 R. Bredereck, A. Kaczmarczyk, J. Luo, R. Niedermeier, and F. Sachse. “On Improving Resource Allocations by Sharing”. In: *Proceedings of the 36th AAAI Conference on Artificial Intelligence (AAAI ’22)*. 2022, 4875–4883.

C12 M. Bentert, R. Bredereck, P. Györgyi, A. Kaczmarczyk, and R. Niedermeier. “A Multivariate Complexity Analysis of the Material Consumption Scheduling Problem”. In: *Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI ’21)*. 2021, 11755–11763.

C11 R. Bredereck, A. Figiel, A. Kaczmarczyk, D. Knop, and R. Niedermeier. “High-Multiplicity Fair Allocation Made More Practical”. In: *Proceedings of the 20th International Conference on Autonomous Agents & Multiagent Systems (AAMAS ’21)*. 2021, 260–268.

C10 N. Boehmer, R. Bredereck, P. Faliszewski, A. Kaczmarczyk, and R. Niedermeier. “Line-Up Elections: Parallel Voting with Shared Candidate Pool”. In: *Proceedings of the 13th Symposium on Algorithmic Game Theory (SAGT ’20)*. 2020, 275–290.

C9 R. Bredereck, P. Faliszewski, M. Furdyna, A. Kaczmarczyk, and M. Lackner. “Strategic Campaign Management in Apportionment Elections”. In: *Proceedings of the 29th International Joint Conference on Artificial Intelligence (IJCAI ’20)*. 2020, 103–109.

C8 R. Bredereck, P. Faliszewski, A. Kaczmarczyk, D. Knop, and R. Niedermeier. "Parameterized Algorithms for Finding a Collective Set of Items". In: *Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI '20)*. 2020, 1838–1845.

C7 R. Bredereck, A. Kaczmarczyk, and R. Niedermeier. "Electing Successive Committees: Complexity and Algorithms". In: *Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI '20)*. 2020, 1846–1853.

C6 R. Bredereck, P. Faliszewski, A. Kaczmarczyk, and R. Niedermeier. "An Experimental View on Committees Providing Justified Representation". In: *Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI '19)*. 2019, 109–115.

C5 R. Bredereck, A. Kaczmarczyk, D. Knop, and R. Niedermeier. "High-Multiplicity Fair Allocation: Lenstra Empowered by N-fold Integer Programming". In: *Proceedings of the 20th ACM Conference on Economics and Computation (EC '19)*. ACM, 2019, 505–523.

C4 R. Bredereck, A. Kaczmarczyk, and R. Niedermeier. "Envy-Free Allocations Respecting Social Networks". In: *Proceedings of the 17th International Conference on Autonomous Agents & Multiagent Systems (AAMAS '18)*. 2018, 283–291.

C3 R. Bredereck, P. Faliszewski, A. Kaczmarczyk, R. Niedermeier, P. Skowron, and N. Talmon. "Robustness Among Multiwinner Voting Rules". In: *Proceedings of the 10th International Symposium on Algorithmic Game Theory (SAGT '17)*. 2017, 80–92.

C2 R. Bredereck, A. Kaczmarczyk, and R. Niedermeier. "On Coalitional Manipulation for Multiwinner Elections: Shortlisting". In: *Proceedings of the 26th International Joint Conference on Artificial Intelligence (IJCAI '17)*. 2017, 887–893.

C1• A. Kaczmarczyk and P. Faliszewski. "Algorithms for Destructive Shift Bribery". In: *Proceedings of the 15th International Conference on Autonomous Agents & Multiagent Systems (AAMAS '16)*. 2016, 305–313.

Theses

T1 A. Kaczmarczyk. "Algorithmic Aspects of Resource Allocation and Multiwinner Voting: Theory and Experiments". PhD thesis. Technical University of Berlin, Germany, 2021.

Scholarships and Awards

Distinguished Program Committee Member 2023
The Thirty-Second International Joint Conference on Artificial Intelligence (IJCAI '23)

Distinguished Program Committee Member (Top 3%) 2022
The Thirty-First International Joint Conference on Artificial Intelligence (IJCAI-ECAI '22)

Outstanding Program Committee Member 2020
The Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI '20)

Erasmus+ Scholarship Spring 2015
Hosted by Universitat Politècnica de Catalunya · Barcelona Tech - UPC, Barcelona, Spain

Rector's Scholarship for Academic Performance 2011 – 2014

Academic Service

Journal Refereeing
AIJ, TEAC, JAIR, MSS

Senior Program Committee Member
IJCAI '21

Program Committee Member
AAMAS '20, AAAI '20, ECAI '20, AAAI '21, AAAI '22, IJCAI-ECAI '22, AAAI '23, IJCAI '23, ECAI '23, AAMAS '24

Subreviewer/Reviewer Assistant
AAAI '18, AAMAS '18, COMSOC '18, IJCAI '18, AAAI '19, AAMAS '19, ADT '19, IJCAI '19, STACS '19, WG '19, ISAAC '22, MFCS '22, IWOCA '23

Organizing Committee Member
The Thirty-Six International Symposium on Theoretical Aspects of Computer Science (STACS '19)

Teaching

Algorithms for Computationally Hard Problems — Spring 2022, 2023
Laboratories

Advanced Algorithms — Spring 2020
Tutorials

Economics and Computation — Spring 2018
Tutorials

Algorithm Coding Club — Fall 2017, Spring 2018
Setting tasks

Computational Social Choice — Spring 2017
Tutorials

Theory of Computation and Computational Complexity — Fall 2014, 2015
Tutorials

Methods of Artificial Intelligence — Spring 2015
Tutorials

Thesis Co-Supervision

Algorithms for Strategic District Merging for Apportionment Methods (M.Sc.)	ongoing
Coalitional Manipulation for Multiwinner Elections: Algorithms and Experiments (B.Sc.)	Fall 2019
On Fair and Envy-Free Allocations Respecting Acyclic Social Networks (B.Sc.)	Spring 2019
Resource Sharing: Reducing Envy Through Social Networks (M.Sc.)	Spring 2019