



Ágnes Cseh

Curriculum Vitæ (April 2020)

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APPOINTMENTS

- Postdoctoral researcher** 2020-
Group ‘Algorithm Engineering’, Hasso Plattner Institute, University of Potsdam
- Postdoctoral researcher** 2016-
Group ‘Mechanism Design’, Institute of Economics, Hungarian Academy of Sciences
- Part-time lecturer** 2017-2018
Department of Operations Research and Actuarial Sciences, Corvinus University of Budapest
- Part-time lecturer** 2016-2017
Department of Computer Science and Information Theory, Budapest University of Technology and Economics
- Postdoctoral researcher** Jan-Aug 2016
Icelandic Centre of Excellence in Theoretical Computer Science, Reykjavik University

EDUCATION

- PhD in Mathematics** 2012-2015
Berlin University of Technology, 07.12.2015
Summa Cum Laude. [Klaus Tschira Award](#). Thesis adviser: Martin Skutella
“Complexity and algorithms in matching problems under preferences”
- MSc in Mathematics** 2010-2012
Berlin University of Technology
Highest distinction. [Clara von Simson Award](#). [Best Degree Award](#). “Stable flows”
- BSc in Mathematics** 2007-2010
Budapest University of Technology and Economics

RESEARCH FOCUS

graph algorithms, complexity, game theory, combinatorial optimization, matching under preferences, fair division

PUBLICATIONS

Book chapter and survey paper

1. K. Cechlárová, [Á. Cseh](#) and D.F. Manlove. [Selected open problems in Matching Under Preferences](#). Book chapter in *Bulletin of EATCS*, European Association for Theoretical Computer Science, number 128, June 2019
2. [Á. Cseh](#). [Popular matchings](#). Book chapter in *Trends in Computational Social Choice*, editor: Ulle Endriss. AI Access, 2017

Journal papers

1. [Á. Cseh](#), T. Fleiner. [The complexity of cake cutting with unequal shares](#), Accepted to *Transactions on Algorithms*
2. T. Andersson, [Á. Cseh](#), L. Ehlers, A. Erlanson. [Organizing Time Banks: Lessons from Matching Markets](#). Accepted to *American Economic Journal: Microeconomics*
3. [Á. Cseh](#), K. Heeger. [The stable marriage problem with ties and restricted edges](#). *Discrete Optimization*, 36:100571, 2020.
4. [Á. Cseh](#), T. Fleiner and P. Harján. [Pareto optimal coalitions of fixed size](#), *Journal of Mechanism and Institution Design*, 4(1):87-108 , 2019.
5. [Á. Cseh](#), J. Matuschke. [New and simple algorithms for stable flow problems](#), *Algorithmica*, 81(6), 2557-2591, 2019.
6. [Á. Cseh](#), M. Skutella. [Paths to stable allocations](#), *International Journal of Game Theory* 48(3), 835-862, 2019
7. [Á. Cseh](#), R. W. Irving and D. F. Manlove. [The Stable Roommates problem with short lists](#), *Theory of Computing Systems (SAGT Special Issue)* 63(1): 128-149, 2019.
8. A. Arulsevan, [Á. Cseh](#), M. Groß, D.F. Manlove and J. Matuschke. [Matchings with lower quotas: algorithms and complexity](#), *Algorithmica*, 80(1):185-208, 2018
9. [Á. Cseh](#), T. Kavitha. [Popular edges and dominant matchings](#), *Mathematical Programming*, 172(1), 209-229, 2018
10. [Á. Cseh](#), C-C. Huang and T. Kavitha. [Popular matchings with two-sided preferences and one-sided ties](#), *SIAM Journal on Discrete Mathematics*, 31(4):2348-2377, 2017
11. [Á. Cseh](#), D.F. Manlove. [Stable marriage and roommates problems with restricted edges: complexity and approximability](#), *Discrete Optimization*, 20:62-89, 2016
12. [Á. Cseh](#), B.C. Dean. [Improved algorithmic results for unsplittable stable allocation problems](#), *Journal of Combinatorial Optimization*, 32:657-671, 2016
13. [Á. Cseh](#), J. Matuschke and M. Skutella. [Stable flows over time](#), *Algorithms (MATCH-UP Special Issue)*, 6:532-545, 2013

Conference papers

1. [Á. Cseh](#), T. Fleiner and P. Harján. [Pareto optimal coalitions of fixed size](#), MATCH-UP 2019
2. [Á. Cseh](#), A. Juhos. [Pairwise preferences in the stable marriage problem](#), STACS 2019
3. [Á. Cseh](#), T. Kavitha. [Popular Matchings in Complete Graphs](#), FSTTCS 2018
4. [Á. Cseh](#), T. Fleiner. [The complexity of cake cutting with unequal shares](#), SAGT 2018, Best Paper Award
5. [Á. Cseh](#), J. Matuschke. [New and simple algorithms for stable flow problems](#), WG 2017
6. [Á. Cseh](#), R. W. Irving and D. F. Manlove. [The Stable Roommates problem with short lists](#), SAGT 2016.
7. [Á. Cseh](#), T. Kavitha. [Popular edges and dominant matchings](#), IPCO 2016
8. [Á. Cseh](#), C-C. Huang and T. Kavitha. [Popular matchings with two-sided preferences and one-sided ties](#), ICALP 2015
9. A. Arulselvan, [Á. Cseh](#), M. Groß, D.F. Manlove and J. Matuschke. [Many-to-one matchings with lower quotas: algorithms and complexity](#), ISAAC 2015
10. [Á. Cseh](#), D.F. Manlove. [Stable marriage and roommates problems with restricted edges: complexity and approximability](#), SAGT 2015
11. [Á. Cseh](#), B.C. Dean. [Improved algorithmic results for unsplittable stable allocation problems](#), MATCH-UP 2015
12. [Á. Cseh](#), M. Skutella. [Paths to stable allocations](#), SAGT 2014
13. [Á. Cseh](#), J. Matuschke, M. Skutella. [Stable flows over time](#), MATCH-UP 2012

Preprints under submission

1. [Á. Cseh](#), Y. Faenza, T. Kavitha, V. Powers. [Popularity, stability, and the dominant matching polytope](#).
2. H. Aziz, [Á. Cseh](#). [Optimal Kidney Exchange with Immunosuppressants](#).

Popular science articles

1. Regular contributor of the most read Hungarian popular science magazine *Élet és tudomány*. Winner of the 2018 Science Communication Competition of the journal.
2. Dénes König. [On graphs and their application to determinant and set theory](#), English translation of the 1916 paper appeared in Hungarian and German, 2016
3. [Á. Cseh](#). [Marriages are made in calculations](#), *Bulletin of EATCS*, 120:179-183, 2016
4. [Á. Cseh](#). [Heiraten nach Plan](#), Winner entry of the Klaus Tschira Award 2016 in Mathematics. *Bild der Wissenschaft*, 20-23, October 2016
5. [Á. Cseh](#). [Was Ehepartner und Nierenspende verbindet. The Noble Matchmakers](#), *Mitteilungen der Deutschen Mathematiker-Vereinigung*, 20(4):212-214, 2012

SELECTED INVITED TALKS

1. Pareto optimal coalitions of fixed size. *Designing and Evaluating Matching Markets workshop, Berlin, 2019*
2. The complexity of cake cutting with unequal shares. *COST Workshop on Algorithmic Game Theory, Rome, 2018*
3. Popular matchings. *Workshop on Future Directions in Computational Social Choice, Budapest, 2016*
4. Paths to stable allocations. *IIT Mumbai, 2014*
5. Nobel matchmakers. *Young Women in Discrete Mathematics Conference, Bonn, 2013*

SYNERGISTIC ACTIVITIES

- Reviewer of papers in SODA, IPCO, ICALP, ESA, STACS, AAMAS, EC, APPROX, MFCS, SAGT, SWAT, WINE, WG, SPAA, LATIN, SIROCCO, FUN, ISAAC, COMSOC, SEA, FSTTCS, WAOA, MATCH-UP, CSR, TALG, Algorithmica, DAM, TCS, TEAC, SCW, Management Science, Algorithms, TOCS, MMOR, JEBO, JET, JAAMAS, JOCO.
- Reviewer of students' research theses, postdoc research proposals, and national grant proposals in Hungary and Poland.
- Examining committee member and external reviewer of a PhD thesis, Eötvös Loránd University, 2016.
- Program Committee member at ACM EC 2020, IJCAI 2020, AAAI 2020, AAMAS 2020, 2019, 2018, SAGT 2020, WAOA 2019, and MATCH-UP 2019, 2017.
- Leader of Working Group “Algorithmic Theory of Network Games” and substitute representative of Hungary in COST Action CA 16228, the European Network for Game Theory.
- Representative of Iceland in the Management Committee of COST Action IC 1205 on Computational Social Choice, 2016.
- Representative of Germany in the Management Committee of COST Action CA15210 European Network for Collaboration on Kidney Exchange Programmes.
- Organiser of the workshops “Emléktábla 2019”, “Workshop on Future Directions in Computational Social Choice 2016”, “100 Years of Matching Theory in Hungary 2016” and conferences “Conference on Economic Design 2019” and “ISMP 2012”.

GRANTS AND AWARDS

- 2020 University of Sydney Mathematical Research Institute, 8500-AUD travel grant.
- 2019 'Women in Engineering Visitor Funding Scheme', 5000-AUD grant of UNSW Sydney.

- 2019 [Young Researcher's Award of the Hungarian Academy of Sciences](#).
- 2018-2022 Head of the research group "Efficient algorithms for allocation problems" supported by the [Hungarian Scientific Research Fund](#).
- 2018-2019 [New National Excellence Program scholarship](#).
- 2018 Best paper award at [SAGT 2018](#).
- 2018 Winner of the [Science Communication Competition](#) of the most read Hungarian science magazine *Élet és tudomány*.
- 2017-2020 [János Bolyai Research Scholarship](#), 3-year grant awarded to 10 researchers under 45 in Mathematics and related fields annually.
- 2016 [Géza Grünwald Commemorative Prize for young researchers](#), awarded to 5 researchers under 30 in Mathematics annually.
- 2016 [Klaus Tschira Award](#), 5000-Euro science communication award.
- 2014 [COST Action IC1205 on Computational Social Choice Travel Grant](#), 2000 EUR.
- 2012-2015 [German Telekom Foundation Fellowship](#), prestigious 3-year grant awarded to 12 PhD students annually.
- 2012 [Clara von Simson Award](#), best female graduate at TU Berlin.
- 2012 [Best Degree Award](#), best Mathematics graduate at TU Berlin.

LONGER RESEARCH STAYS

- 2020 University of Sydney, Australia, 2 months (upcoming)
- 2019 UNSW Sydney, Australia, 1 month
- 2015 Hausdorff Institute for Mathematics Bonn, 4 months
- 2015 Tata Institute of Fundamental Research Mumbai, 3 months
- 2014 University of Glasgow, 7 months
- 2013 Clemson University, 4 months

TEACHING AND RESEARCH SUPERVISION

- Autumn 17 and Autumn 18: **Matching Markets**, Economics Graduate School 'Pallas Athene Domus Scientiae', in Hungarian
Instructor and administrator of a full half-semester course for postgraduate students in Economics. Lectures, exercise sessions, setting exams, grading, administration.
- Autumn 17: **Operations Research**, Corvinus University of Budapest, in Hungarian
Responsible for 270 out of 970 undergraduate students in Economics, Accounting, Management and Finance. Exercise sessions, setting and correcting exams.

- Spring 17: **Quantitative Methods**, Corvinus University of Budapest, in English
Instructor and administrator of a full half-semester course for graduate students in Marketing. Lectures, exercise sessions, setting exams, grading, administration.
- Spring 17: **Quantitative Methods**, Corvinus University of Budapest, in Hungarian
Responsible for 140 out of 470 graduate students in Economics, Accounting, Management and Finance. Exercise sessions, setting exams.
- Autumn 16: **Foundations of Computer Science**, Budapest University of Technology and Economics, in Hungarian
Instructor and administrator of a full undergraduate course for part-time Engineering students working at Bosch. Lectures, exercise sessions, oral examination, administration.
- Spring 12: **Advanced Discrete Mathematics**, TU Berlin, in English and German
Exercise sessions for 90 graduate students in Mathematics and Computer Science. Oral examination.
- 2018-: Student research thesis supervision (1st prize), Masters' thesis supervision (1), Bachelor's thesis supervision (3), Budapest University of Technology and Economics.
- 2012-2015: Research seminar supervision (3), Masters' thesis supervision (2), TU Berlin.

Guest teaching appointments

- Autumn 17: **Algorithmic Matching Design**, Sabanci University Istanbul, in English
Instructor of a one-week course for postgraduate students in Mathematics, Computer Science and Economics. Erasmus+ teaching exchange.
- Autumn 17: **Linear Programming**, University of Sarajevo, in English
Instructor of a one-week undergraduate Economics course. CEEPUS teaching exchange.