

Aras Selvi

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Education

Imperial College London, London, UK

Ph.D., Operations Research 2024 (Expected)

Advisor: Wolfram Wiesemann

Fellowship: The Alan Turing Institute (2022-23 Enrichment Placement Student)

Ph.D. Internship: JP Morgan AI Research (2023 Off-Cycle Research Associate)

Research visit: Professor Aharon Ben-Tal (Technion – Israel Institute of Technology)

M.Res., Operations Research and Business Analytics (Distinction) 2020

Awards: Dean's List for Academic Excellence

Tilburg University, Tilburg, The Netherlands

M.Res., Operations Research (Cum Laude) 2019

Ozyegin University, Istanbul, Turkey

B.Sc., Industrial Engineering (High Honor) 2017

Awards: Dean's List, ranked 2nd among 125 Faculty of Engineering graduates

Exchange: Queensland University of Technology, Brisbane, Australia

Minor, Computer Science (High Honor)

Research Interests

Topics: Robust optimization and learning, decision making under uncertainty, computational privacy and fairness

Methodologies: Optimization theory & algorithms, convex analysis, learning theory, information theory

Research Papers

Published Work

Selvi, A., Den Hertog, D., & Wiesemann, W. (2023). A reformulation-linearization technique for optimization over simplices. **Mathematical Programming** 197(1):427-447. Available on [\[Optimization Online\]](#), [\[Springer\]](#)

Selvi, A., Ben-Tal, A., Brekelmans, R., & Den Hertog, D. (2022). Convex maximization via adjustable robust optimization. **INFORMS Journal on Computing** 34(4):2091-2105. Available on [\[Optimization Online\]](#)

- Winner of the 2021 INFORMS Computing Society Best Student Paper Award [\[Link\]](#)

Selvi, A., Belbasi, R., Haugh M., & Wiesemann, W. (2022). Wasserstein Logistic Regression with Mixed Features. **NeurIPS22**. Available on [\[Optimization Online\]](#), [\[NeurIPS proceedings\]](#)

Roebers, L. M., **Selvi, A.**, & Vera, J. C. (2019). Using column generation to solve extensions to the Markowitz model. **The Engineering Economist**, 64(3):275-288. Available on [\[arXiv\]](#), [\[Taylor & Francis\]](#)

Under Review & Working Papers

Selvi, A., Liu, H., & Wiesemann, W. (2022). Differential privacy via distributionally robust optimization. Under Review. Available on [\[Optimization Online\]](#), [\[arXiv\]](#)

Selvi, A., Ben-Tal, A., & Wiesemann, W. (2022). Maximizing the sum of maxima of convex functions.

Selvi, A., Cory-Wright, R., den Hertog, D. & Wiesemann, W. (2023). Integer-Conic duality via Robust Optimization.

Belbasi, R, **Selvi, A.**, Haugh M., & Wiesemann, W. (2023). Cutting-plane methods for Wasserstein ML.

Wang, Z., **Selvi, A.**, Peura, H., Mikolon, S., & Wiesemann, W. (2023). Assortment optimization for donation collecting nonprofit organizations.

Awards

- PhD Placement Award: 9-month placement (starting October 2022) at **The Alan Turing Institute** HQ in London, with a £1,500 financial allowance and £472.5 monthly stipends to support research

- **Sargent Centre Research Travel Grant 2023:** £450 grant supporting international conference travel.
- **SIAM 2023 Student Award:** \$800 registration and travel support for SIAM Conference on Optimization
- **NeurIPS 2022 Scholar Award:** Complimentary in-person registration and Hotel stay for attendance
- Winner: **2021 INFORMS Computing Society Best Student Paper Award**
- Honorable Mention: **2019 INFORMS O.R. & Analytics Student Team Competition**
- Finalist: AI UK 2023 PitchFest
- Outstanding/Top Reviewer, Complimentary Registration: ICML 2022, ICLR 2022, NeurIPS 2022
- President's Address 2022 Awardee: Named by Imperial College London president for global contributions
- Dean's List: Imperial College London, Ozyegin University
- Dean's Reception 2022: Invite-only event by the Dean of Imperial College Business School
- Undergraduate Scholarship: Ozyegin University Performance Scholarship (awarded to three students)
- Alumni Award: one of the 20 alumni who made a notable contribution to Ozyegin University (2019)
- Graduate Scholarship: Tilburg University Koopmans Scholarship, Imperial College Business School Funding

Attended Conferences

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| - Thirty-sixth Conference on Neural Information Processing Systems (New Orleans, USA) | December, 2022 |
| - PhD Winter School: Data Science, Optimization and Operations Research (Zinal, CH) | January, 2022 |
| - The Operational Research Society Annual Conference OR63 (Virtual) | September, 2021 |
| - Tenth International Conference on Learning Representations (Virtual) | April, 2022 |
| - Thirty-ninth International Conference on Machine Learning (Virtual) | July, 2022 |

Invited Talks

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| - Robust Optimization Webinars [Link] (Virtual) | March, 2023 |
| - SIAM Conference on Optimization 2023 (Seattle, USA) | May, 2023 |
| - Pint of Science 2023: Science festival - Quench your thirst for knowledge (London, UK) | May, 2023 |
| - AI UK 2023: Lightning Talks (with Dr Anastasia Borovykh) (London, UK) | March, 2023 |
| - The Sargent Centre for Process Systems Engineering (London, UK) | November, 2022 |
| - Alan Turing Institute #TuringConnections (London, UK) | November, 2022 |
| - Imperial College Department of Computing Joint Optimization Seminars (London, UK) | October, 2022 |
| - QuantumBlack - A McKinsey Company (London, UK) | June, 2022 |
| - Imperial College Operations Research PhD Seminar (London, UK) | May, 2022 |
| - BCG GAMMA (London, UK) | May, 2022 |
| - INFORMS Computing Society Conference (Tampa, USA) | January, 2022 |
| - Imperial-LBS-UCL Brown Bag Seminar Series (Virtual, UK) | January, 2021 |
| - Robust Optimization Webinars (Virtual) | July, 2020 |
| - INFORMS Business Analytics Conference (Austin, USA) | April, 2019 |

Teaching Experiences

Imperial College London

Teaching assistant for masters and MBA courses

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| - Mathematics and Statistics (MSc Business Analytics, MSc Business Analytics online) | 2020-2023 |
| - Optimisation and Decision Models (MSc Business Analytics online) | 2021-2023 |
| - Fundamentals of Database Technologies (MSc Business Analytics online) | 2021 |
| - Machine Learning (MSc Business Analytics online) | 2021 |
| - Big Data, AI & Machine Learning (MBA) | 2021-2022 |
| - Data Structures and Algorithms with Python (MSc Fintech, MSc RMFE, MSc Business Analytics) | 2021 |
| - Centre for Process Systems Engineering Optimisation Course for Professionals | 2020 |

Quantitative assistant for MSc Business Analytics admissions

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| - Interviewing a selection of candidates | 2020-2021 |
| - Preparing & evaluating quantitative interviews for candidates and | 2020-2022 |

London Business School

Teaching assistant for masters and MBA courses - Decision and Risk Analysis (MiM)

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| - Data Visualisation and Story Telling (Master in Analytics and Management) | 2022 |
| - Data Science for Business Analytics and Management (Masters in Analytics and Management) | 2020-2022 |

- Data Mining for Business Intelligence (MBA) 2021
- Applied Statistics (Masters in Analytics and Management) 2022
- Data Analytics for Managers (MBA & MiM) 2022
- Decision Analytics & Modelling (Masters in Analytics and Management) 2023
- Business Analytics (MiM, MBA) 2023

London School of Economics

Class teacher for masters courses

- Algorithmic Techniques for Data Mining (MSc Applied Mathematics, MSc Operations Research) 2019-2023

Emeritus

Subject matter expert for online certificate course

- ICBS Professional Certificate in Machine Learning and Artificial Intelligence 2021-2022

Tilburg University

Teaching assistant for masters and undergraduate courses

- Mathematics (BSc Social Sciences) 2019
- Decision Making for Business Analytics (MSc Business Analytics and Operations Research) 2018

Ozyegin University

Teaching assistant for undergraduate courses

- Operations Research I (BSc Industrial Engineering) 2017
- Productions Systems Analysis (BSc Industrial Engineering) 2017
- Physics 102 (All Engineering Undergraduates) 2016

Skills

Programming: Python, Julia, MATLAB, C++, R, Optimization Solvers, Machine Learning Packages, SQL, L^AT_EX
Language: Turkish (Native), Armenian (Native), English (Advanced), German (Beginner)

Memberships & Fellowships

- Fellow: Imperial Business Analytics, Data Science Institute (DSI)
- Member: Computational Optimisation Group of Department of Computing (Imperial College London)
- (Past) Board member: Graduate Student Society and MRes Education Committee of Tilburg University

Service

- Reviewer: Operations Research, Management Science, Mathematical Programming, Manufacturing & Service Operations Management, SIAM Journal on Optimization, INFORMS Journal on Computing, Mathematical Programming Computation, Computational Management Science, Optimization Letters, Operations Research Letters, European Journal of Operations Research
- Conference Reviewer: ICLR (2022 [highlighted reviewer](#), 2023), NeurIPS (2021, 2022 [Top Reviewer](#), 2023), AISTATS (2022, 2023), ICML (2023, 2022 [outstanding reviewer](#), invited as a session chair)
- Program Committee Member: ACM FAccT Conference 2023 (Privacy & Security track)
- Member of the NeurIPS 2022 Outreach Programme
- Academic Ambassador of Imperial College London's PhD Programme in Operations Research
- Member of INFORMS and The Operational Research Society
- (Past) Volunteer: Robin Code Turkey, Dreams Academy Istanbul, Hour of Code, AI UK 2023

Industry Experience & Summer Internships

- Academic mentor on Data Spark Programme: [KPMG UK](#), [Chatham House](#) (London, UK) 2019-2021
- Pro bono consultant on analytics, major nonprofit organisation (confidential due to NDA) 2021-2023
- Intern, Coca-Cola Icecek HQ (Istanbul, Turkey) Summer 2015-2016
- Intern, Metro Cash & Carry (Istanbul, Turkey) Summer 2016
- Intern, Fiba Factoring (Istanbul, Turkey) Summer 2014
- Intern, Anchor Grup (Bucharest, Romania) Spring 2014

Last updated May 16, 2023.