

## Aras Selvi

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### Education

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**Imperial College London**, London, UK

Ph.D., Operations Research 2024 (Expected)

Advisor: Wolfram Wiesemann

Fellowship: The Alan Turing Institute 2022-23 Enrichment Placement

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 2<sup>nd</sup> among 125 Faculty of Engineering graduates

Exchange: Queensland University of Technology, Brisbane, Australia

Minor, Computer Science (High Honor)

### Research Interests

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**Topics:** Robust optimization, robust learning, decision making under uncertainty, computational privacy

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

### Research Papers

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#### 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 [\[Optimization Online\]](#), [\[NeurIPS conference page\]](#)

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.

**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

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- 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

- NeurIPS 2022 Scholar Award: Complimentary in-person registration and Hotel stay to attend the conference

- 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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|--|----------------|
| - 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<sup>A</sup>T<sub>E</sub>X  
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, 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](#)), 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: <a href="#">KPMG UK</a> , <a href="#">Chatham House</a> (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 March 10, 2023.*