# Aras Selvi

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## Education

**Imperial College London**, London, UK

Ph.D., Operations Research                                                                                       2024 (Expected)
   Advisor: Professor 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, Koopmans Scholar)                                                   2019

**Ozyegin University**, Istanbul, Turkey

B.Sc., Industrial Engineering (High Honor)                                                                     2017
   Awards: Dean's List, ranked $2^{nd}$ 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]
   - Winner of the 2023 ICBS Best Analytics & Operations Student Paper Award

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

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

Wang, Z., **Selvi, A.**, Peura, H., Mikolon, S., & Wiesemann, W. (2023). Decision making under uncertainty for non-profit organizations.

**Selvi, A.**, Cory-Wright, R., Den Hertog, D., & Wiesemann, W. (2023). A robust optimization approach to copositive programming: theory and applications to energy markets. Working paper.

## 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
- Winner: **2023 ICBS Operations and Analytics Best PhD Paper Award**
- **G-Research Quant PhD Grant:** £500 grant supporting international conference travel [May, 2023].
- **Sargent Centre Research Travel Grant 2023:** £450 grant supporting international conference travel.
- **SIAM 2023 Student Award:** registration and $800 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 Reviewer, Complimentary Registration: ICML 2022, ICLR 2022
- Top Reviewer: 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

## Invited Talks

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| - Rotman Young Scholar seminar series (Virtual) | June, 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 |
| - LBS Transatlantic Doctoral Conference: MSO track (London, UK) | May, 2023 |
| - Robust Optimization Webinars [Link] (Virtual) | March, 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 |

## Chaired Sessions

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| - INFORMS Revenue Management & Pricing (RMP) Conference (London, UK) | July, 2023 |

## 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 |

## Teaching Experiences

**Imperial College London**

*Teaching assistant* for masters and MBA courses

| | |
|---|---:|
| - 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 |

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|---|---|
| - Big Data, AI & Machine Learning (MBA full-time, executive, online, weekend) | 2021-2023 |
| - 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) | 2022 |
| - 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

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

### Emeritus

*Subject matter expert* for online certificate course

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

### Tilburg University

*Teaching assistant* for masters and undergraduate courses

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

### Ozyegin University

*Teaching assistant* for undergraduate courses

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|---|---|
| - 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, LaTeX
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 (2), Management Science, Mathematical Programming, Manufacturing & Service Operations Management (2), 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

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| PhD Associate Intern, JP Morgan AI Research (London, UK) | Summer 2023 |
| 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 |
| 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 July 7, 2023.*