

Aras Selvi

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Education

Imperial College Business School, London, UK

Ph.D., Operations Research 2025 (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 – highest possible award) 2020

Awards: Dean's List for Academic Excellence

Tilburg University, Tilburg, The Netherlands

M.Res., Operations Research (Koopmans Scholar, Cum Laude – highest possible award) 2019

Advisor: Professor Dick den Hertog

Ozyegin University, Istanbul, Turkey

B.Sc., Industrial Engineering (High Honor – highest possible award; Computer Science minor) 2017

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

Exchange: Queensland University of Technology, Brisbane, Australia

Research Interests

Topics: Data-driven decision making, decision making under uncertainty, ethical decision making via optimization

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

Research Papers

Optimal Ethical Decision Making

- Selvi, A., Liu, H., & Wiesemann, W. (2023). Differential privacy via distributionally robust optimization. **Accepted (conditional) at Operations Research**. [\[Preprint\]](#)
 - ★ Second place for the 2024 George Nicholson Student Paper Competition
 - ★ Winner of the 2023 Imperial College Business School Best Analytics & Operations Student Paper Award
 - ★ Honorable mention prize for the 2023 INFORMS Optimization Society Student Paper Award [\[Link\]](#)
- Selvi, A., Tang, B., Kocigit, C., Vayanos, P., & Wiesemann, W. (2024). Policy-making for housing allocation using stochastic dynamic programming. **Working paper**.

Robust Machine Learning

- Belbasi, R., Selvi, A., & Wiesemann, W. (2023). It's all in the mix: Wasserstein ML with mixed features. **Major Revision at Manufacturing & Service Operations Management**. [\[Preprint\]](#)
- Selvi, A., Kreacic, E., Ghassemi, M., Potluru, V., Balch, T., & Veloso, M. (2024). Distributionally and adversarially robust ML via intersecting Wasserstein balls. **Under Review at AISTATS24**.
 - ★ Accepted for presentation at the 2024 INFORMS Workshop on Data Science
 - ★ Finalist for the 2024 INFORMS Data Mining Society Best Student Paper Competition
- Selvi, A., Belbasi, R., Haugh, M., & Wiesemann, W. (2022). Wasserstein logistic regression with mixed features. **NeurIPS22**. [\[Preprint\]](#), [\[NeurIPS proceedings\]](#)

Nonconvex Optimization

- Selvi, A., Ben-Tal, A., & Wiesemann, W. (2024). Maximizing the sum of maxima of convex functions. **To be submitted** in October 2024.
- 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. [\[Preprint\]](#)
 - ★ Winner of the 2021 INFORMS Computing Society Best Student Paper Award [\[Link\]](#)

- *Selvi, A., Den Hertog, D., & Wiesemann, W. (2023).* A reformulation-linearization technique for optimization over simplices. **Mathematical Programming** [Short Communication] 197(1):427-447. [[Preprint](#)], [[Springer](#)]
- *Roebers, L., Selvi, A., & Vera, J. (2019).* Using column generation to solve extensions to the Markowitz model. **The Engineering Economist** [Technical Note] 64(3):275-288. [[Preprint](#)], [[Taylor & Francis](#)]

Awards

Paper Awards

- **Second Place:** 2024 George Nicholson Student Paper Competition
- **Finalist:** 2024 INFORMS Data Mining Society Best Student Paper Competition
- **Honorable Mention:** 2023 INFORMS Optimization Society Student Paper Award
- **Winner:** 2023 Imperial College Business School Best Analytics & Operations Student Paper
- **Winner:** 2021 INFORMS Computing Society Best Student Paper Award
- **Honorable Mention:** 2019 INFORMS O.R. & Analytics Student Team Competition

PhD Awards

- **Winner (university-wide):** 2024 G-Research Imperial College London PhD [competition](#), £5,000 prize
- **Fully Funded Attendance:** [2024 NUS Next-Gen Scholar's Symposium](#)
- **Fully Funded Attendance:** [2024 Georgia Tech ISyE Junior Researcher Workshop](#)
- **PhD Placement Award 2022:** 9-month placement at The Alan Turing Institute HQ in London, with a £1,500 financial allowance and £472.5 monthly stipends to support research
- **President's Address 2022:** Named by Imperial College London president for global contributions
- **Dean's Reception 2022:** Invite-only event by the Dean of Imperial College Business School

Research/Travel Grants

- **G-Research Quant PhD Grant:** £500 grant supporting international conference travel [[May, 2023](#)].
- **Sargent Centre PhD Financial Support 2024:** £1,500 grant supporting PhD-related costs
- **Sargent Centre Research Travel Grant 2024:** £300 grant supporting international conference travel
- **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

Reviewer Awards

- **Best Reviewer Award:** ICML 2024
- **Outstanding Reviewer:** ICML 2022, ICLR 2022
- **Top Reviewer:** NeurIPS 2022

Teaching Awards

- **LSE Teaching Award 2024:** Recognised for 'exceptional efforts' by the Academic Staff Reward Committee

Pre-doctoral Awards

- **Dean's List:** Imperial College London, Ozyegin University
- **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 (2017)
- **Graduate Scholarship:** Tilburg University Koopmans Scholarship, Imperial College London PhD Funding

Invited Talks

Academic Talks

- Singapore University of Technology and Design (Singapore) August, 2024
- Analytics for X & Next-Gen Scholars Symposium (Singapore) August, 2024
- ISMP 2024, RO and ML minisymposium (Montréal, Canada) July, 2024
- Stochastic Programming Society Junior Session (Virtual) April, 2024
- Georgia Tech ISyE Junior Researcher Workshop (Atlanta, USA) April, 2024
- Socially Intelligent Artificial Systems Group, University of Amsterdam (Virtual) March, 2024
- Imperial College London Computational Statistics and Machine Learning (London, UK) February, 2024
- PGMO Days 2023: Robust Optimization and Applications (Paris, FR) November, 2023
- INFORMS Annual Meeting (Phoenix, USA) October, 2023
- University of Toronto Rotman Young Scholar seminar series (Virtual) June, 2023

- SIAM Conference on Optimization 2023 (Seattle, USA)	May, 2023
- LBS Transatlantic Doctoral Conference: MSO track (London, UK)	May, 2023
- Robust Optimization Webinars (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
- Imperial College Operations Research PhD Seminar (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

Industry & Public Talks

- Legal & General (Virtual)	June, 2024
- Pint of Science 2023: Science festival - Quench your thirst for knowledge (London, UK)	May, 2023
- QuantumBlack - A McKinsey Company (London, UK)	June, 2022
- BCG GAMMA (London, UK)	May, 2022
- AI UK 2023 PitchFest Finalist Talks	March, 2023

Chaired Sessions

- ISMP 2024, RO and ML minisymposium (Montréal, Canada)	July, 2024
- INFORMS Revenue Management & Pricing Conference (London, UK)	July, 2023

Attended Conferences

- 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

London School of Economics

Class teacher for a masters-level course (most recent student evaluations 4.8/5, n = 30)

- Algorithmic Techniques for ML (MSc Applied Mathematics, MSc Operations Research)	2020-2024
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Imperial College London

Teaching assistant for masters and MBA courses

- Advanced Machine Learning (MSc Business Analytics)	2024
- 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 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

- 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)	2020-2023
- 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

Emeritus

Subject matter expert for online certificate course

- Imperial College 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 at the Department of Computing (Imperial College London)
- **Board member (Past):** Graduate Student Society and MRes Education Committee of Tilburg University

Service

- **Journal Reviewer:** Operations Research (2), Management Science (3), Mathematical Programming, Manufacturing & Service Operations Management (2), SIAM Journal on Optimization, Automatica, INFORMS Journal on Computing (3), Mathematical Programming Computation, Computational Management Science, Optimization Letters, Operations Research Letters, European Journal of Operations Research, Optimization Methods & Software
- **Conference Reviewer:** ICLR (2022 [highlighted reviewer](#), 2023, 2024), NeurIPS (2021, 2022 [top reviewer](#), 2023, 2024 [emergency]), AISTATS (2022, 2023), ICML (2022 [outstanding reviewer](#), invited as a session chair, 2023, 2024 [best reviewer award](#)), INFORMS Workshop on Data Science (2024)
- **Program Committee Member:** ACM FAccT Conference 2023 (Privacy & Security track)
- **Volunteer (Organizations):** Robin Code Turkey, Dreams Academy Istanbul, Hour of Code
- **Volunteer (Events):** NeurIPS 2022 Outreach Programme, AI UK 2023
- **Academic Ambassador:** Imperial College Business School's PhD Programme

Industry Experience & Summer Internships

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)	2021-2023
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 December 17, 2024.