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

Ozyegin University, Istanbul, Turkey

B.Sc., Industrial Engineering (High Honor – highest possible award)   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 – highest possible award)

Research Interests

Topics: Data-driven decision making, decision making under uncertainty, privacy and fairness in machine learning
Methodologies: Optimization theory & algorithms, convex analysis, learning theory, information theory

Research Papers

Published or Submitted Work

Selvi, A., Liu, H., & Wiesemann, W. (2023). Differential privacy via distributionally robust optimization.
Under **Major Revision**. [Optimization Online], [arXiv]
    Winner of the 2023 ICBS Best Analytics & Operations Student Paper Award
    Honorable mention prize for the 2023 INFORMS Optimization Society Student Paper Award [Link]

Belbasi, R, *Selvi, A.*, & Wiesemann, W. (2023). It's all in the mix: Wasserstein ML with mixed features. Under
Major Revision. [Optimization Online], [arXiv]

Selvi, A. & JP Morgan AI Research collaborators. (2024). Distributionally and adversarially robust logistic
regression via intersecting Wasserstein balls. **Under Review**.

Selvi, A., Den Hertog, D., & Wiesemann, W. (2023). A reformulation-linearization technique for optimization over
simplices. **Mathematical Programming** 197(1):427-447. [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. [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. [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. [arXiv], [Taylor & Francis]

Working Papers

Selvi, A., Ben-Tal, A., & Wiesemann, W. (2024). Maximizing the sum of maxima of convex functions. To be
submitted in June 2024.

Selvi, A., Tang, B., Kocyigit, C., Vayanos, P., & Wiesemann, W. (2024). Fair sequential decision making.

Awards

- Selected to attend the 2024 Georgia Tech ISyE Junior Researcher Workshop with full funding
- 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
- Honorable mention: 2023 INFORMS Optimization Society Student Paper Award
- 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

- 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
- 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 (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

- 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

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
- 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 Reseach)   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, 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 (2), 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

- Conference Reviewer: ICLR (2022 highlighted reviewer, 2023, 2024), NeurIPS (2021, 2022 Top Reviewer, 2023), AISTATS (2022, 2023), ICML (2022 outstanding reviewer, invited as a session chair, 2023, 2024)

- 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

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 May 28, 2024.