Dr. Zühal Özcan Yavuz

Education

- **Ph.D. in Industrial Engineering**, İstanbul Technical University, 2018 – 2024
- **Visiting Ph.D. Researcher (EU Marie Curie Project)**, Koç University, 2016 – 2018
- **Visiting Ph.D. Researcher (Fulbright Scholar)**, Arizona State University, 2015 – 2016
- **Master's Degree in Industrial Engineering & Operations Research (Valedictorian)**, Işık University, 2014 – 2015
- **Bachelor's Degree in Industrial Engineering (Valedictorian)**, Işık University, 2009 – 2014
- **Bachelor's Degree in International Trade & Business (Double Major)**, Işık University, 2011 – 2014

Experience

- Part-time Lecturer, Bahçeşehir University, Beşiktaş, İstanbul, January 2024 – 2025
  - Taught courses: Engineering Statistics
- Part-time AP Macroeconomics Teacher in Hisar Schools, Eyüpsultan, İstanbul, 2024 – 2025
- Part-time Lecturer, Industrial Engineering, İstanbul Bilgi University, Eyüpsultan, İstanbul, 2023 – 2025
  - Taught courses: Decision Analysis, Statistics, Probability, and Optimization
- Data Scientist, Invent Analytics, Sarıyer, İstanbul, 2018 – 2019
- Research & Teaching Assistant, Industrial Engineering, Koç University, Sarıyer, İstanbul, 2016 – 2018
- Teaching Assistant, Industrial Engineering, Işık University, İstanbul, 2014 – 2016
- Teaching Assistant, Industrial Engineering, Arizona State University, USA, 2015
- Long-term Intern, KoçSistem, Üsküdar, İstanbul, 2014

Research Projects

- **TÜBİTAK 1001 Project**: Lig Usulü Turnuvalar Için Hakem Atama Probleminin Önemli Genişletmeleri, 2022 – 2024 (Researcher)
- **BAP (Scientific Research Project) in İstanbul Technical University**: Forest Fire Risk Mapping and Planning of Preventive Measures, 2021 – 2024 (Researcher)
- **EU Marie Curie Project**: European Union's Seventh Framework Program, 2016 – 2018 (Researcher)

Publications

- **Özcan, Z.**, Cağlayan, İ., Kabak, Ö., and Kılıç Gül, F. (2024). Integrated risk mapping for forest fire management using the analytical hierarchy process and ordered weighted average: a case study in southern Türkiye. *Natural Hazards.*
- **Özcan, Z.**, Cağlayan, İ., and Kabak, Ö. (2024). A comprehensive taxonomy for forest fire risk assessment: bridging methodological gaps and proposing future directions. *Environmental Monitoring and Assessment,* 825 (196).

Conference Proceedings

- **Özcan, Z.**, Kabak, Ö., and Caglayan, İ. (2025). "Innovative Strategies for Firefighting Resource Allocation in Forest Fires: A Comparative Study of Maximal Covering and Travel Distance Minimization Approaches." *Industrial Engineering in the era of Artificial Intelligence* by Springer Nature, pp.112-123.

In-Progress Articles

Submitted Articles

- **Özcan, Z.**, Kabak, Ö., and Caglayan, İ. "Optimizing Fire Station Placement in Forest Areas: A Multi-Model Approach with Stochastic Simulations." Submitted to *Computers & Operations Research* – Under Review.
- **Özcan, Z.**, Atan, T., Çavdaroğlu, B., and Çanakoğlu, E. "Stochastic Referee Assignment in Sports Tournaments." Submitted to *Annals of Operations Research* – Under Review.
- Bayazıt, M., Atan, T., Çavdaroglu, B., and **Özcan, Z.** "Explaining variation in referee appointment decisions in European football leagues: The role of generalised trust." Sport Management Review - Under Review.

Pre-print Articles

- Atan, T., and Çavdaroğlu, B., and **Özcan, Z.**."A Comparison of Management Policies for Referee Appointments in European Men's Football." Submitted to *Research Square* – Pre-Print Available.

Accepted Conference Proceedings (Forthcoming)

- **Özcan, Z.** and Cavdaroglu, B. (2025). "A Mixed-Integer Programming Approach to Melanoma Detection Using Fractal Analysis of Lesion Border Irregularities." Accepted for *Industrial Engineering in the era of Artificial Intelligence* by Springer Nature.
- **Özcan, Z.** and Yavuz, T. (2025)."A Theoretical Analysis of Fuzzy MCDM Methods for Healthcare Resource Allocation under Uncertainty." Accepted for publication in *Intelligent and Fuzzy Systems (INFUS 2025).*
- Yavuz, T. and **Özcan, Z.**. (2025)."A Fuzzy Multi-Criteria Decision-Making Approach for Course Scheduling in Higher Education." Accepted for publication in *Intelligent and Fuzzy Systems (INFUS 2025).*
- Düzgit, Z., **Özcan, Z.** and Yavuz, T. (2025)."A Fuzzy AHP-TOPSIS Approach for Dynamic Due Date Assignment in Machine Scheduling." Accepted for publication in *Intelligent and Fuzzy Systems (INFUS 2025).*

- **Özcan, Z.** and Yavuz, T. (2025). "Belirsizlik Altinda Karar Verme Egitimi: Bir Simulasyon Dersi Uygulamasi." Accepted for *YAEM 2025*.

Ongoing Researches

- **Özcan, Z.**, Kabak, Ö., and Caglayan, İ. "A Decomposition-Based Approach for Optimizing Fire Station Placement: Minimizing Total Travel Time in Forest Areas."
- Atan, T., Çavdaroglu, B., and **Özcan, Z.** "Referee assignment problem with multiple leagues."

Theses

- **Ph.D. Thesis**: Determination of Forest Fire Risk Mapping and Planning of Preventive Measures, 2021 – 2024
- **Master Thesis**: Optimum Blend of Fractal Dimensions Methods for Automatic Malignancy Determination in Dermoscopy Images with GAMS, August 2014 – September 2015
- **IE Bachelor Thesis**: Course Scheduling with CPLEX, September 2013 – January 2014
- **ITR Bachelor Thesis**: Opening a Pharmacy via MS Office Project Excel, January 2013 – June 2013

Conferences and Presentations

- **Özcan, Z.**, Kabak, Ö., and Cağlayan, İ. (2024). Optimizing Fire Station Placement: Integrating Multi-Model Approaches for Enhanced Response Efficiency in Urban and Forested Areas. Presented at the *YAEM 2024 Conference*, October 2-4, 2024, Trabzon, Türkiye.
- **Özcan, Z.**, Cağlayan, İ., and Kabak, Ö. (2024). Innovative Strategies for Firefighting Resource Allocation in Forest Fires: A Comparative Study of Maximal Covering and Travel Distance Minimization Approaches. Presented at the *Hybrid Global Joint Conference on Industrial Engineering (GJCIE)*, August 7-9, 2024, Antalya, Türkiye.
- **Özcan, Z.**, Cağlayan, İ., and Kabak, Ö. (2023). Determination of Forest Risk Maps and Planning of Preventive Measures. Presented at the *INFORMS Annual Meeting*, October 15-18, 2023, Phoenix, AZ, USA.

Scholarships and Grants

- **Fulbright Scholarship**: Awarded for Ph.D. at Arizona State University, 2015
- **TÜBİTAK 2210 – National MSc Scholarship**: Awarded for Master's Degree Funding, 2014 – 2015
- **Valedictorian Award (Işık University)**: Awarded for achieving the highest GPA of 3.98/4.00, graduating as the top student in both the Industrial Engineering and International Trade programs, as well as overall university-wide, 2014.
- **Valedictorian Award (Işık University)**: Awarded for graduating with a perfect GPA of 4.00/4.00 as the top student in the Master's Degree in Industrial Engineering & Operations Research, 2015.