

Erdi DASDEMIR (Ph.D.)

Assistant Professor of Industrial Engineering
Data Scientist

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Fields of Interest

Mathematical optimization, multi-objective optimization, data analytics, evolutionary algorithms, manned and unmanned vehicle routing.

Education

- Ph.D., Industrial Engineering, METU, Turkey, 2021.
- M.S., Industrial Engineering, Hacettepe University, Turkey, 2015.
- B.S., Industrial Engineering, Hacettepe University, Turkey, 2013.

Thesis

- **Ph.D. Thesis:** Unmanned Air Vehicle Routing with Multiple Objectives (2021)
- **Master's Thesis:** Phase I Analysis of Variables Type Correlated Data (2015)
- **Senior Thesis:** Minimizing the Financial Losses of Hacettepe University Hospitals: Improving Hospital Billing Process and Reducing Billing Errors (2013)

Work Experience

- Hacettepe University, Industrial Engineering Department, Ankara/Turkey, Assistant Professor, Dates: April 2022 – ongoing.
- State University of New York at Buffalo, Department of Industrial and Systems Engineering, Buffalo/New York/US, Visiting Faculty, Dates: October 2022 – October 2023.
- State University of New York at Buffalo, Department of Industrial and Systems Engineering, Buffalo/New York/US, Visiting Researcher, Supervisor: Professor Rajan Batta, Dates: February 2019 – January 2020.
- Hacettepe University, Industrial Engineering Department, Ankara/Turkey, Research Assistant, Dates: September 2013 – October 2021.
- BNB Consulting, Cyber Park, Bilkent, Ankara/Turkey, Business Development and Project Development Specialist, Dates: October 2012 – August 2013.

Funded Research Projects

1. TÜBİTAK 2219-International Postdoctoral Research Fellowship Program (October 2022 – October 2023), Award No: 1059B192201022, Principal Investigator: Erdi Dasdemiir
2. YÖK YUDAB - International Ph.D. Research Fellowship Program for Those Pursuing Doctoral Studies in Priority Areas (February 2019 – December 2019), Principal Investigator: Erdi Dasdemiir
3. Bi-Objective UAV Route Planning in Continuous Space (1 October.2015 – 31 March 2017), Air Force Office of Scientific Research, Air Force Material Command, USAF, Award No: FA9550-16-1-0005, Principal Investigator: Prof. Dr. Murat KÖKSALAN, Researchers: Erdi Dasdemiir, Dr. Diclehan Tezcaner Ozturk, Hannan Tureci.
4. Minimizing the Financial Losses of Hacettepe University Hospitals: Improving Hospital Billing Process and Reducing Billing Errors, TÜBİTAK, 2209-A Sanayi Entegre Proje Destek Programı, Award No: 1919B011202200, Principal Investigator: Erdi Daşdemir, Researchers: Murat Atalay, Volkan Bilgin, Macit Mete Oğuz.

Journal Publications

1. Akduran, Y., Dasdemiir, E., & Testik, M. C. (2023). Bi-objective parameter setting problem of a genetic algorithm: an empirical study on traveling salesperson problem. *Applied Intelligence*, 1-15, <https://doi.org/10.1007/s10489-023-04972-z>.
2. Moskal M.D., Dasdemiir E., Batta R. (2023) “Unmanned Aerial Vehicle Information Collection Missions with Uncertain Characteristics”, *INFORMS Journal on Computing*, [doi:10.1287/ijoc.2022.1245](https://doi.org/10.1287/ijoc.2022.1245).
3. Dasdemiir, E., Batta, R., Koksalan, M., Tezcaner Ozturk, D. (2022) “UAV Routing for Reconnaissance Mission: A Multi-Objective Orienteering Problem with Time-Dependent Prizes and Multiple Connections”, *Computers & Operations Research*, 145: 105882.
4. Dasdemiir, E. Testik, M.C., Tezcaner Ozturk, D., Tuncer Sakar, C., Guleryuz G., Aydin O. M., (2022) “A Multi-objective open vehicle routing problem with overbooking: Exact and heuristic solution approaches for an employee transportation problem,” *OMEGA - The International Journal of Management Science*, 108:102587.
5. Dasdemiir, E., Koksalan M., Tezcaner Ozturk, D. (2020) “A Flexible Reference Point-Based Multi-objective Evolutionary Algorithm: An Application to the UAV Route Planning Problem”, *Computers & Operations Research*, 114: 104811.
6. Aydin, O., Shaygan, A. Dasdemiir, E., Soydan G. (2017) “Selecting Health Care Improvement Projects: A Methodology Integrating Cause-and-Effect Diagram and Analytical Hierarchy Process”, *Quality Management in Health Care*, 26.1: 40-48.
7. Dasdemiir, E., Weiss, C., Testik, M., Knoth, S. (2016) “Evaluation of Phase I Analysis Scenarios on Phase II Performance of Control Charts for Autocorrelated Observations”, *Quality Engineering*, 28.3:293-304.

8. Dasdemiir, S., Dasdemiir, E., (2019) Next Generation Supply Chain and Stock Control with Internet of Things and RFID, *Vergi Raporu (ULAKBIM)*, 236, 233-253.

Conferences

1. Dasdemiir, E., Batta R., Jose, E. "Routing and Scheduling with Degradation-Triggered Job Arrivals: An Application to Aerial Forest Firefighting with a UAV Fleet," *CORS 2023*, Montreal, Canada, 29-31 May 2023.
2. Dasdemiir, E., Tezcaner Öztürk D., Koksalan, M. "Multi-objective Routing of UAVs in Continuous Terrain," *YAEM 2021*, Online, 04-07 July 2021.
3. Dasdemiir, E., Batta, R., Köksalan M., Tezcaner Öztürk D., "UAV Routing to Maximize Information Gain in a Monitored Environment with Time and Radar Restrictions," *INFORMS Annual Meeting 2019*, Seattle, Washington, USA, 13-16 November, 2019.
4. Dasdemiir, E., Tezcaner Ozturk D., Koksalan, M. "A Preference-Based Multi-Objective Evolutionary Algorithm Based Solution Approach to Bi and Three-Objective UAV Route Planning Problems in Continuous Space," *25th International Conference on Multiple Criteria Decision Making*, Istanbul, Turkey, 16-21 June 2019.
5. Dasdemiir, E., Batta, R., Tezcaner Öztürk D., Koksalan, M. "Multi-objective Routing of UAVs," *YAEM 2019*, Ankara, Turkey, 12-14 June 2019.
6. Dasdemiir, E., Tezcaner Öztürk D., Koksalan, M. "Unmanned Air Vehicle Routing with Soft Time Windows," *YAEM 2018*, Eskisehir, Turkey, 26-29 June 2018.
7. Dasdemiir, E., Testik, M.C., Testik, O.M., Tuncer Sakar, C. "A Multi-Objective Evolutionary Algorithm Approach to Employee Bus Transportation Problem," *ICATCES'18*, Safranbolu, Turkey, 11-13 May 2018.
8. Dasdemiir, E., Tezcaner Öztürk D., Koksalan, M. "An Evolutionary Algorithm for Multi-Objective UAV Routing," *YAEM 2017*, Istanbul, Turkey, 5-7 July 2017.
9. Dasdemiir, E., Tezcaner Ozturk D., Koksalan, M. "A Preference-Based Evolutionary Algorithm and Implementation on UAV Route Planning in Continuous Space," *MCDM 2017*, Ottawa, Canada, 9-14 July 2017.
10. Dasdemiir, E., Tezcaner Öztürk D., Köksalan M. "A Preference-Based Evolutionary Algorithm for Bi-Objective UAV Route Planning in Continuous Space," *INFORMS Annual Meeting 2016*, Nashville, Tennessee, USA, 20-23 October 2019.
11. Dasdemiir, E., Tezcaner Öztürk D., Köksalan M. "A Preference-Based Multi-objective Evolutionary Algorithm for Bi-Objective UAV Route Planning in Continuous Space," *Poster Presentation, 12th MCDA/M Summer School 2016*, Recife, Pernambuco, Brazil, 18-29 July 2016.

12. Dasdemir, E., Weiss, C., Testik, M., and Knoth, S. "Phase I Analysis of Autocorrelated Time Series Data," *European Network for Business and Industrial Statistics (ENBIS) 14 Conference*, Linz/Austria, 21-25 September 2014.
13. Aydın, O., Shaygan, A. and Dasdemir, E. "A Cause and Effect Diagram and AHP Based Methodology for Selection of Quality Improvement Projects," *European Network for Business and Industrial Statistics (ENBIS) 14 Conference*, Linz/Austria, 21-25 September 2014.
14. Sonmez, V., Dasdemir, E., Testik, M. and Aydın, O. "A Simulation Based Decision Support Tool for Hospital Bed Capacity Planning," *Proceedings of Global Conference on Healthcare Systems Engineering (GCHSE) 2014*, Istanbul/Turkey, 5-8 August, 2014.
15. Dasdemir, E., Oguz, M., Atalay, M., Bilgin, V., Testik, M. and Soydan, G. "Improving Hospital Billing Processes for Reducing Costs of Billing Errors," *European Network for Business and Industrial Statistics (ENBIS) 13 Conference*, Ankara/Turkey. 15-19 September 2013.

Awards

- "OMEGA - The International Journal of Management Science" 2022 Best Reviewer Award

Professional Certificates

- University of Michigan, Programming for Everybody (Python).
- University of Michigan, Python Data Structures.
- University of Michigan, Using Python to Access Web Data.
- University of Michigan, Building Web Applications in PHP.
- University of Michigan, Building Database Applications in PHP.
- University of Michigan, Introduction to Structured Query Language (SQL).
- University of Michigan, Introduction to HTML.
- University of Michigan, Introduction to CSS.
- Harvard University (HarvardX), Data Science: Visualization.
- Harvard University (HarvardX), Data Science: Probability.
- Harvard University (HarvardX), Data Science: Inference and Modeling.
- Harvard University (HarvardX), Data Science: Productivity Tools.

Competencies

Computer Skills

- R, Python, PHP, SQL, JavaScript, HTML/CSS, GUROBI, Latex.

Foreign Language

- Advanced level of English

Hobbies

- Camping, trekking, skiing and snowboarding, nature, music.