

## **Asst. Prof. Vedat Bayram**

### **Personal Information**

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### **International Researcher IDs**

ScholarID: 7925ol8AAAAJ

ORCID: 0000-0003-0695-2806

Publons / Web Of Science ResearcherID: H-8528-2018

ScopusID: 56480683900

Yoksis Researcher ID: 261292

### **Biography**

Vedat Bayram is an Assistant Professor at TED University, Department of Industrial Engineering. Prior to his current position he was a Postdoctoral Research Fellow at the University of Waterloo, Faculty of Engineering, Department of Management Sciences. He worked for many years as a Senior Operations Research Analysis Officer at the Project Management Division of Turkish General Staff Headquarters. He received his PhD. from Bilkent University, the Department of Industrial Engineering in 2015. He holds an M.S. degree in Operations Research from U.S. Naval Postgraduate School and a B.S. degree in Systems Engineering from Turkish Army Academy. His research interests include large scale optimization, convex optimization, stochastic programming, and data-driven optimization applications with an emphasis on disaster management, transportation and logistics problems.

### **Education Information**

Doctorate, Ihsan Dogramaci Bilkent University, Faculty Of Engineering, Department Of Industrial Engineering, Turkey 2009 - 2015

Postgraduate, U.S. Naval Postgraduate School, Department of Operations Research, United States Of America 2000 - 2002

Undergraduate, Land War Academy Command, Turkish Military Academy (Dean's Office), Turkey 1993 - 1997

### **Dissertations**

Doctorate, Nonlinear Mixed Integer Programming Models and Algorithms for Fair and Efficient Large Scale Evacuation Planning, Ihsan Dogramaci Bilkent University, Faculty Of Engineering, Department Of Industrial Engineering, 2015

Postgraduate, Optimizing the Capacity and Operation of U.S. Army Ammunition Production Facilities, Naval Postgraduate School, Department of Operations Research, 2002

### **Research Areas**

Logistics Management, Disaster Management, Transportation Engineering, Traffic Engineering, Nonlinear Programming, Linear Programming, Integer and Mixed Integer Programming, Facility Location and Design, Network Design

## Academic Titles / Tasks

Assistant Professor, TED University, Faculty of Engineering, Department of Industrial Engineering, 2017 - Continues  
Other, University of Waterloo, Department of Management Sciences, 2016 - 2017

## Academic and Administrative Experience

Strategic Planning Group, Resource Planning, TED University, Faculty Of Engineering, Department Of Industrial Engineering, 2022 - Continues  
University Ethics Committee Member, TED University, Faculty Of Engineering, Department Of Industrial Engineering, 2017 - Continues  
Department Coordinator for Double Major-Minor Degree Programs, TED University, Faculty Of Engineering, Department Of Industrial Engineering, 2017 - Continues  
Faculty Board Assistant Professor Representative, TED University, Faculty Of Engineering, Department Of Industrial Engineering, 2017 - Continues  
Faculty Discipline Board Member, TED University, Faculty Of Engineering, Department Of Industrial Engineering, 2017 - Continues  
Department Coordinator for Senior Design Project Courses, TED University, Faculty Of Engineering, Department Of Industrial Engineering, 2017 - Continues  
Assistant Professor, Faculty of Engineering, Department of Industrial Engineering, 2017 - Continues

## Courses

Senior Project I, Undergraduate, 2022 - 2023, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Mathematical Modeling & Optimization II, Undergraduate, 2022 - 2023, 2021 - 2022, 2018 - 2019, 2017 - 2018  
Discrete Optimization, Undergraduate, 2021 - 2022, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017  
Humanitarian Logistics, Undergraduate, 2021 - 2022  
Senior Project II, Undergraduate, 2021 - 2022  
Mathematical Modeling & Optimization II, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Senior Project I, Undergraduate, 2021 - 2022  
Discrete Optimization, Postgraduate, 2020 - 2021, 2018 - 2019, 2017 - 2018  
Humanitarian Logistics, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017  
Discrete Optimization, Undergraduate, 2020 - 2021  
Senior Project II, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
Graduation Project, Postgraduate, 2018 - 2019  
Discrete Optimization, Postgraduate, 2016 - 2017

## Advising Theses

Bayram V., Yıldız B., Multi Model Tsunami Evacuation Planning considering Evacuees' Compliance Behavior, Doctorate, S.Moslemi(Student), Continues  
Bayram V., Yıldız B., Evacuation Zoning for Istanbul Tsunami Evacuation Planning, Postgraduate, L.Mamouri(Student), Continues  
Bayram V., Yıldız B., Network Design and Management Problems for Social Aid Distribution Operations, Doctorate, D.Benli(Student), Continues  
Bayram V., Nickel S., Evacuation Zoning Considering Evacuee Compliance, Postgraduate, M.Luo(Student), Continues

## Advising Graduates (Non-Thesis)

Bayram V., USE OF UNMANNED AERIAL VEHICLES IN CITY LOGISTICS, Masters (Non-Thesis), H.Gül(Student), 2019

## Jury Memberships

Post Graduate, Post Graduate, İhsan Doğramacı Bilkent Üniversitesi, August, 2022

September, 2021

July, 2021

June, 2020

December, 2019

December, 2019

June, 2019

Bilkent University Supply Chain Management and Logistics Workshop, June, 2019

May, 2019

February, 2019

December, 2018

November, 2018

July, 2018

June, 2018

June, 2018

June, 2018

June, 2018

ISCO (International Symposium on Combinatorial Optimization), January, 2018

December, 2017

December, 2017

September, 2017

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Hub Network Design Problem with Capacity, Congestion and Stochastic Demand Considerations**  
Bayram V., Yıldız B., Farham S.  
TRANSPORTATION SCIENCE, vol.1, no.1, pp.1-20, 2023 (SCI-Expanded)
- II. **Optimal Order Batching in Warehouse Management: A Data-Driven Robust Approach**  
Bayram V., Baloch G., Gzara F., Elhedhli S.  
INFORMS Journal on Optimization, vol.4, no.3, pp.278-303, 2022 (SCI-Expanded)
- III. **Joint capacity, inventory, and demand allocation decisions in manufacturing systems**  
Bayram V., Gzara F., Elhedhli S.  
IIE TRANSACTIONS, vol.51, no.3, pp.248-265, 2019 (SCI-Expanded)
- IV. **A STOCHASTIC PROGRAMMING APPROACH FOR SHELTER LOCATION AND EVACUATION PLANNING**  
Bayram V., Yaman H.  
RAIRO-OPERATIONS RESEARCH, vol.52, no.3, pp.779-805, 2018 (SCI-Expanded)
- V. **Shelter Location and Evacuation Route Assignment Under Uncertainty: A Benders Decomposition Approach**  
Bayram V., Yaman H.  
TRANSPORTATION SCIENCE, vol.52, no.2, pp.416-436, 2018 (SCI-Expanded)
- VI. **Compromising system and user interests in shelter location and evacuation planning**  
Bayram V., Tansel B. C., Yaman H.  
TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, vol.72, pp.146-163, 2015 (SCI-Expanded)

## Articles Published in Other Journals

- I. **AN EXACT SECOND ORDER CONE PROGRAMMING APPROACH FOR TRAFFIC ASSIGNMENT PROBLEMS**  
Bayram V.  
RAIRO - Operations Research, vol.58, no.1, pp.847-864, 2024 (Scopus)
- II. **A Joint Demand and Supply Management Approach to Large Scale Urban Evacuation Planning: Evacuate or Shelter-in-Place, Staging and Dynamic Resource Allocation**  
Bayram V., Yaman Patternotte H.  
Optimization Online, vol.1, no.1, pp.1, 2021 (Peer-Reviewed Journal)
- III. **Line balancing optimization under robot location and worker-station assignment considerations: A case study of a dishwasher factory**  
Bas I., Tosun O., Bayram V.  
PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSITESI MUHENDISLIK BILIMLERI DERGISI, vol.27, no.4, pp.495-503, 2021 (ESCI)
- IV. **Data driven storage location assignment problem considering order picking frequencies: A heuristic approach**  
Cobanoglu I., Gure I., Bayram V.  
PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSITESI MUHENDISLIK BILIMLERI DERGISI, vol.27, no.4, pp.520-531, 2021 (ESCI)
- V. **Optimization models for large scale network evacuation planning and management: A literature review**  
Bayram V.  
Surveys in Operations Research and Management Science, vol.21, no.2, pp.63-84, 2016 (Scopus)

## Refereed Congress / Symposium Publications in Proceedings

- I. **PROCUREMENT AND INVENTORY OPTIMIZATION CONSIDERING PART DISRUPTIONS IN MANUFACTURING**  
Bayram V.  
14th INTERNATIONAL CONFERENCE ON ENGINEERING & NATURAL SCIENCES, 18 - 19 July 2022, pp.42
- II. **STRATEGICALLY LOCATING LAST MILE WAREHOUSES FOR AN ONLINE RETAIL COMPANY**  
Bayram V.  
INTERNATIONAL CONFERENCE ON RESEARCH IN APPLIED SCIENCES, 9 - 10 July 2022, pp.94-95
- III. **Zone Based Evacuate or Shelter-in-place Decisions and Dynamic Resource Allocation**  
Bayram V.
- IV. **Large Scale Urban Evacuation Planning and Management: A Zone-Based Approach**  
Bayram V.
- V. **A New Perspective On Hub Location Problems: A Path-based Generalized Approach,**  
Bayram V.
- VI. **Cell-Based Dynamic Evacuation Traffic Management under Risk and Resource Allocation Considerations**  
Bayram V., Yaman Patternotte H.
- VII. **Hub Location under Capacity and Congestion Considerations: An Exact Solution Approach**  
Bayram V., Farham M. S., Yıldız B.
- VIII. **Hub Location under Congestion and Capacity Considerations: An Exact Solution Approach**  
Farham S., Yıldız B., Bayram V.
- IX. **Data Driven Robust Order Batching Decisions for Warehouse Management: A Data Analytics and Branch and Price Approach**  
Bayram V., Baloch G., Gzara F., Elhedhli S.
- X. **A Benders Decomposition Approach for Shelter Location and Evacuation Planning under Uncertainty**

Bayram V., Yaman H.

**XI. Compromising System and User Interests in Shelter Location and Evacuation Planning**

Bayram V., Tansel B. Ç.

## Supported Projects

Yıldız B., Bayram V., TUBITAK Project, Sosyal yardım ulaştırma ağları tasarım ve yönetimi, 2022 - 2025

Bayram V., Yalçiner A. C., Yıldız B., Doğulu C., TUBITAK Project, Tsunami Tehdidine Karşı İstanbul İli Marmara Denizi Kıyıları Tahliye Planlaması Ve Yönetimi (Evacuation Planning and Management for Istanbul City Marmara Sea Shores Against Tsunami Threat), 2021 - 2024

BAYRAM V., H2020 Project, "Real-Time Large Scale Urban Evacuation Management-RealTimeEvac", 2020 - 2023

Bayram V., TUBITAK Project, Hub Location under Congestion and Capacity Considerations, 2019 - 2021

Gzara S. F., Elhedhli P. S., BAYRAM V., Baloch G., Data Analytics for Warehouse Operations Management", 2016 - 2017

BAYRAM V., Yaman P. H., TUBITAK Project, Nonlinear Mixed Integer Programming Models for Evacuation Planning, 2014 - 2016

## Activities in Scientific Journals

Sustainability Analytics and Modeling Journal, IFORS, Elsevier, Committee Member, 2021 - Continues

## Memberships / Tasks in Scientific Organizations

INFORMS Public Sector Operations Research, Member, 2018 - Continues, United States Of America

INFORMS Section on Location Analysis, Member, 2018 - Continues, United States Of America

INFORMS Transportation Science and Logistics Society, Member, 2016 - Continues, United States Of America

INFORMS, Member, 2015 - Continues, United States Of America

YAEM (Yöneylem Araştırması ve Endüstri Mühendisliği), Member, 2015 - Continues, Turkey

## Scientific Refereeing

Socio Economic Planning Sciences, Journal Indexed in SSCI, September 2022

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, SCI Journal, July 2022

Sustainability Analytics and Modeling, Journal Indexed in SCI-E, June 2022

Transportation Research Part C, SCI Journal, May 2022

4OR, SCI Journal, April 2022

TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, SCI Journal, February 2022

4OR, SCI Journal, January 2022

4OR: A Quarterly Journal of Operations Research, December 2021

TRANSPORTATION RESEARCH. PART C: EMERGING TECHNOLOGIES, December 2021

IIE Transactions, November 2021

OR SPECTRUM, October 2021

SOCIO-ECONOMIC PLANNING SCIENCES, October 2021

Computers and Industrial Engineering, August 2021

IIE Transactions, August 2021

TRANSPORTATION SCIENCE, August 2021

SOCIO-ECONOMIC PLANNING SCIENCES, July 2021

Computers and Operations Research, June 2021

SOCIO-ECONOMIC PLANNING SCIENCES, June 2021

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, May 2021  
OR SPECTRUM, May 2021  
IIE Transactions, March 2021  
Computers and Industrial Engineering, March 2021  
INFORMS Journal on Computing, March 2021  
Computers and Operations Research, March 2021  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, January 2021  
IET INTELLIGENT TRANSPORT SYSTEMS, January 2021  
TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, December 2020  
TRANSPORTATION RESEARCH PART E-LOGISTICS AND TRANSPORTATION REVIEW, December 2020  
Computers and Operations Research, December 2020  
TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, November 2020  
OMEGA International Journal of Management Science, November 2020  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, October 2020  
SOCIO-ECONOMIC PLANNING SCIENCES, October 2020  
INFORMS Journal on Computing, September 2020  
TRANSPORTATION RESEARCH PART E-LOGISTICS AND TRANSPORTATION REVIEW, August 2020  
CENTRAL EUROPEAN JOURNAL OF OPERATIONS RESEARCH, August 2020  
Production and Operations Management, August 2020  
TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, July 2020  
TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, June 2020  
INFORMS Journal on Computing, May 2020  
TRANSPORTATION SCIENCE, May 2020  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, April 2020  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, March 2020  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, February 2020  
INFOR: Information Systems and Operational Research, January 2020  
SOCIO-ECONOMIC PLANNING SCIENCES, January 2020  
OMEGA International Journal of Management Science, December 2019  
INFOR: Information Systems and Operational Research, January 2019  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, January 2019  
NETWORKS, January 2019  
TRANSPORTMETRICA A: TRANSPORT SCIENCE, January 2019  
TRANSPORTATION RESEARCH PART E-LOGISTICS AND TRANSPORTATION REVIEW, January 2019  
SOCIO-ECONOMIC PLANNING SCIENCES, January 2019  
OR SPECTRUM, January 2019  
TRANSPORTATION SCIENCE, January 2019  
INTERNATIONAL JOURNAL OF DISASTER RISK REDUCTION, January 2018  
TRANSPORTMETRICA A: TRANSPORT SCIENCE, January 2018  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, January 2018  
TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, January 2018  
TRANSPORTATION RESEARCH PART E-LOGISTICS AND TRANSPORTATION REVIEW, January 2018  
Computers and Operations Research, January 2017  
INFOR: Information Systems and Operational Research, January 2017  
ANNALS OF OPERATIONS RESEARCH, January 2017  
INFORMS Journal on Computing, January 2017  
TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, January 2017  
IIE Transactions, January 2017  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, January 2017  
TRANSPORTATION RESEARCH PART E-LOGISTICS AND TRANSPORTATION REVIEW, January 2017  
Computers and Operations Research, January 2016

INFOR: Information Systems and Operational Research, January 2016  
TRANSPORTATION RESEARCH PART B-METHODOLOGICAL, January 2016  
INTERNATIONAL JOURNAL OF DISASTER RISK REDUCTION, January 2016  
SURVEYS IN OPERATIONS RESEARCH AND MANAGEMENT SCIENCE, January 2016

### **Tasks In Event Organizations**

Bayram V., Salman F. S., Yetiş B., Balçık Koyuncu B., The 1st Bi-Annual EURO HOpe Summer School on Humanitarian Logistics 2021, Science / Art Camp or Summer School Organization, Turkey, Temmuz 2021

### **Congress and Symposium Activities**

EURO HOPE Mini Conference, Invited Speaker, İstanbul, Turkey, 2022

### **Awards**

Bayram V., HORIZON EUROPE HORIZON-MSCA-2021-PF-01-01 — MSCA Postdoctoral Fellowships 2021 Seal of Excellence, European Commission, September 2022

Bayram V., Horizon 2020 Marie Curie Global Fellowship Seal of Excellence Award, European Commission, August 2020