

Assoc. Prof. ZEYNEP MÜGE AVŞAR

Personal Information

Office Phone: [+90 312 210 4681](tel:+903122104681)

Email: mavsar@metu.edu.tr

Web: <https://avesis.metu.edu.tr/mavsar>

Address: Orta Doğu Teknik Üniversitesi Endüstri Mühendisliği Bölümü Ankara

International Researcher IDs

ScholarID: b1xnz_YAAAAJ

ORCID: 0000-0001-5005-7409

Publons / Web Of Science ResearcherID: AAZ-6252-2020

ScopusID: 6506235005

Yoksis Researcher ID: 164129

Education Information

Doctorate, Rutgers, The State University of New Jersey, Endüstri ve Sistem Mühendisliği, Endüstri ve Sistem Mühendisliği, United States Of America 1993 - 1998

Postgraduate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Endüstri Mühendisliği (YI) (Tezli), Turkey 1990 - 1992

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, Turkey 1985 - 1990

Foreign Languages

English, C2 Mastery

Dissertations

Doctorate, Algorithms for Stochastic Games and a Stochastic Game Application: Inventory Control under Substitutable Demand , Rutgers, The State University Of New Jersey, New Brunswick Campus, School Of Graduate Studies, Industrial And Systems Engineering Department Endüstri Ve Sistem Mühendisliği Bölümü, 1998

Postgraduate, Markov Decision Processes with Restricted Observations , Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 1992

Research Areas

Engineering and Technology

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2021 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2011 - 2021
Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2002 - 2011
Assistant Professor, Ihsan Dogramaci Bilkent University, Faculty Of Engineering, Department Of Industrial Engineering, 2000 - 2002
Researcher, Technische Universiteit Eindhoven, Teknoloji Yönetimi, Operasyonel Planlama ve Kontrol Bölümü, 1999 - 2000
Assistant Professor, Ihsan Dogramaci Bilkent University, Faculty Of Engineering, Department Of Industrial Engineering, 1998 - 1999
Research Assistant, Rutgers, The State University of New Jersey, Endüstri ve Sistem Mühendisliği Bölümü, 1993 - 1998
Research Assistant, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 1990 - 1993

Courses

REVENUE MANAGEMENT, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014
SYSTEMS DESIGN II, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2011 - 2012, 2010 - 2011, 2009 - 2010, 2008 - 2009, 2007 - 2008, 2006 - 2007, 2005 - 2006, 2004 - 2005, 2003 - 2004, 2002 - 2003
INTRODUCTION TO PROBABILITY, Undergraduate, 2020 - 2021, 2017 - 2018, 2010 - 2011, 2009 - 2010, 2008 - 2009
STOCHASTIC MODELS IN OPERATIONS RESEARCH, Undergraduate, 2019 - 2020, 2018 - 2019, 2015 - 2016, 2013 - 2014, 2012 - 2013
SYSTEMS DESIGN I, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2011 - 2012, 2010 - 2011, 2009 - 2010, 2008 - 2009, 2007 - 2008, 2006 - 2007, 2005 - 2006, 2004 - 2005, 2003 - 2004
RESEARCH TOPICS IN IE, Doctorate, 2016 - 2017
DYNAMIC DECISION MODELS, Postgraduate, 2017 - 2018, 2014 - 2015, 2011 - 2012, 2007 - 2008, 2005 - 2006, 2003 - 2004
STOCHASTIC PROCESSES I, Postgraduate, 2016 - 2017
STOCHASTIC PROCESSES II, Postgraduate, 2014 - 2015, 2012 - 2013, 2011 - 2012
SPECIAL TOPICS IN IE: REVENUE MANAGEMENT, Undergraduate, 2011 - 2012, 2010 - 2011, 2009 - 2010
STOCHASTIC PROCESSES, Postgraduate, 2008 - 2009, 2007 - 2008, 2006 - 2007, 2005 - 2006, 2004 - 2005
INVENTORY PLANNING PROBLEMS, Undergraduate, 2007 - 2008, 2006 - 2007, 2005 - 2006
OPERATIONS MANAGEMENT, Postgraduate, 2005 - 2006, 2004 - 2005, 2003 - 2004, 2002 - 2003
OPERATIONS RESEARCH II, Undergraduate, 2004 - 2005
OPERATIONAL RESEARCH II, Undergraduate, 2003 - 2004, 2002 - 2003
STOCHASTIC MDELS IN OPERATIONS RESEARCH, Undergraduate, 2003 - 2004
STOCHASTIC MODELS, Undergraduate, 2001 - 2002, 2000 - 2001
PRODUCTION SYSTEMS DESIGN - PRACTICE, Undergraduate, 2001 - 2002, 2000 - 2001, 1998 - 1999
DYNAMIC PROGRAMMING, Undergraduate, 2001 - 2002, 1998 - 1999
ENGINEERING ECONOMY, Undergraduate, 2002 - 2003
OPERATIONS ANALYSIS AND DESIGN, Undergraduate, 2000 - 2001, 1998 - 1999

Advising Theses

Avşar Z. M., Kat B., Mathematical Modeling and Solution Approaches for Balancing Turkish Electricity Day Ahead Market, Postgraduate, S.Yörükoğlu(Student), 2015

Avşar Z. M., Revenue Management for Airline Industry (Havayolları Sektöründe Gelir Yönetimi), Doctorate, A.Selçuk(Student), 2014

AVŞAR Z. M., Dynamic pricing for airline revenue management problem with cancellation possibility, Doctorate, A.Melih(Student), 2014

Avşar Z. M., Service Models for Airline Revenue Management Problems, Postgraduate, F.Eroğlu(Student), 2011

AVŞAR Z. M., Alternative Mathematical Models for Revenue Management Problems, Postgraduate, E.Terciyanlı(Student), 2009

AVŞAR Z. M., Periodic-Review Inventory Systems with Exogenous and Endogenous Replenishment Lead Times, Postgraduate, M.Aşçı(Student), 2007

AVŞAR Z. M., A Risk-Sensitive Approach for Airline Network Revenue Management Problems, Postgraduate, D.Çetiner(Student), 2007

AVŞAR Z. M., An Approximate Model for Kanban Controlled Assembly Systems, Postgraduate, E.Topan(Student), 2005

AVŞAR Z. M., On the Service Models for Dynamic Scheduling of Multi-Class Base-Stock Controlled Systems, Postgraduate, B.Kat(Student), 2005

AVŞAR Z. M., An Approximate Model for Performance Measurement in Base-Stock Controlled Assembly Systems, Postgraduate, U.Rodoplu(Student), 2004

Designed Lessons

Avşar Z. M., Revenue Management, Undergraduate, 2009 - 2010

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Approximation of sell-out probability to estimate expected marginal value of capacity**
Selçuk A. M., Avşar Z. M.
COMPUTERS & INDUSTRIAL ENGINEERING, vol.151, 2021 (SCI-Expanded)
- II. **Dynamic pricing in airline revenue management**
Selcuk A. M., AVŞAR Z. M.
JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, vol.478, no.2, pp.1191-1217, 2019 (SCI-Expanded)
- III. **Alternative risk-averse approaches for airline network revenue management**
Terciyanlı E., AVŞAR Z. M.
TRANSPORTATION RESEARCH PART E-LOGISTICS AND TRANSPORTATION REVIEW, vol.125, pp.27-46, 2019 (SCI-Expanded)
- IV. **An integrated day-ahead market clearing model: Incorporating paradoxically rejected/accepted orders and a case study**
YORUKOGLU S., AVŞAR Z. M., Kat B.
ELECTRIC POWER SYSTEMS RESEARCH, vol.163, pp.513-522, 2018 (SCI-Expanded)
- V. **Approximate queueing models for capacitated multi-stage inventory systems under base-stock control**
AVŞAR Z. M., ZİJM H.
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.236, no.1, pp.135-146, 2014 (SCI-Expanded)
- VI. **An approximation for kanban controlled assembly systems**
TOPAN E., AVŞAR Z. M.
ANNALS OF OPERATIONS RESEARCH, vol.182, no.1, pp.133-162, 2011 (SCI-Expanded)
- VII. **Using aggregate fill rate for dynamic scheduling of multi-class systems**
Kat B., AVŞAR Z. M.
ANNALS OF OPERATIONS RESEARCH, vol.182, no.1, pp.87-117, 2011 (SCI-Expanded)
- VIII. **An approximate model for base-stock-controlled assembly systems**
AVŞAR Z. M., ZİJM H., RODOPLU U.

- IIE TRANSACTIONS, vol.41, no.3, pp.260-274, 2009 (SCI-Expanded)
- IX. **A note on two-person zero-sum communicating stochastic games**
AVŞAR Z. M., Baykal-Gursoy M.
OPERATIONS RESEARCH LETTERS, vol.34, no.4, pp.412-420, 2006 (SCI-Expanded)
- X. **Capacitated Two-Indenture Models for Repairable Item Systems**
ZİJM H., AVŞAR Z. M.
International Journal Of Production Economics, vol.81, pp.573-588, 2003 (SCI-Expanded)
- XI. **Inventory control under substitutable demand: A stochastic game application**
AVŞAR Z. M., Baykal-Gursoy M.
NAVAL RESEARCH LOGISTICS, vol.49, no.4, pp.359-375, 2002 (SCI-Expanded)
- XII. **A decomposition approach for undiscounted two-person zero-sum stochastic games**
AVŞAR Z. M., Baykal-Gursoy M.
MATHEMATICAL METHODS OF OPERATIONS RESEARCH, vol.49, no.3, pp.483-500, 1999 (SCI-Expanded)
- XIII. **Markov decision processes with restricted observations: Finite horizon case**
Serin Y. Y., AVSAR Z. M.
NAVAL RESEARCH LOGISTICS, vol.44, no.5, pp.439-456, 1997 (SCI-Expanded)

Articles Published in Other Journals

- I. **Rüzgâr Gücü Üretimi için Tahmin ve Teklif Sistemi Tasarımı**
Aksoy S. A., Eryiğit E., Hashimova N., İşbilir M., Avşar Z. M., Köksal G., Terciyanlı E.
Endüstri Mühendisliği Dergisi, vol.24, no.3, pp.4-15, 2013 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Capacitated Two-Echelon Inventory Models for Repairable Item Systems**
AVŞAR Z. M., ZİJM H.
in: Analysis and Modeling of Manufacturing Systems, S.B. Gershwin, Y. Dallery, C.T. Papadopoulos, J. MacGregor Smith, Editor, Kluwer Academic Publishers, New York, pp.1-36, 2003

Refereed Congress / Symposium Publications in Proceedings

- I. **Türkiye Gün Öncesi Elektrik Piyasası Dengelemesi için Matematiksel Modelleme ve Çözüm Yaklaşımları**
Yörükoğlu S., Avşar Z. M., Kat B.
35. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi YA/EM'15, Ankara, Turkey, 9 - 11 September 2015, pp.24
- II. **Rüzgar Enerjisi Santrallerine Entegre Pompaj Depolamalı HES Tesislerinin Eniyilemesi ve Benzetimi**
Terciyanlı E., Avşar Z. M.
35. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi YA/EM'15, Ankara, Turkey, 9 - 11 September 2015, pp.23
- III. **Optimal Policy Structure for Risk-Sensitive Airline Revenue Management**
Tavashoğlu O., Avşar Z. M.
26th European Conference on Operational Research EURO|INFORMS MMXIII, Rome, Italy, 1 - 04 July 2013, pp.248
- IV. **Risk-Sensitive Models for Airline Network Revenue Management**
Tavashoğlu O., Avşar Z. M.
International IIE Conference, 33. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi, İstanbul, Turkey, 26 - 28 June 2013, pp.77

- V. **Dynamic Pricing – A Model with Stockout Probability**
Selçuk A. M., Avşar Z. M.
International IIE Conference, 33. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi, İstanbul, Turkey, 26 - 28 June 2013, pp.145
- VI. **Rüzgar Enerjisi Santralleri ile Pompaj Depolamalı Hidroelektrik Santrallerin Hibrid Modellenmesi**
Terciyanlı E., Avşar Z. M.
31. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi YA/EM'11, Sakarya, Turkey, 5 - 07 July 2011, pp.24
- VII. **Revenue Management in Airline Industry with Cancellations**
Selçuk A. M., Avşar Z. M.
31. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi YA/EM'11, Sakarya, Turkey, 5 - 07 July 2011, pp.5
- VIII. **Gelir Yönetimi Problemleri için Alternatif Matematiksel Modeller**
Terciyanlı E., Avşar Z. M.
29. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi YA/EM'09, Ankara, Turkey, 22 - 24 June 2009, pp.126
- IX. **An Approximate Model for Kanban Controlled Assembly Systems**
Topan E., Avşar Z. M.
22nd European Conference on Operational Research EURO XXII, Praha, Czech Republic, 8 - 11 July 2007, pp.152
- X. **An Approximate Model for Kanban Controlled Assembly Systems**
Topan E., Avşar Z. M.
TU/e-OPAC and METU-IE 2nd Joint Workshop, Eindhoven, Netherlands, 20 - 21 November 2006
- XI. **On the Service Models for Dynamic Scheduling of Multi-Class Make-to-Stock Systems**
Kat B., Avşar Z. M.
TU/e-OPAC and METU-IE 1st Joint Workshop, Ankara, Turkey, 20 - 22 October 2005
- XII. **Heuristics for Dynamic Scheduling of Multi-Class Base-Stock Controlled Systems**
Kat B., Avşar Z. M.
5th International Conference on 'Analysis of Manufacturing Systems – Production Management', Zakinthos, Greece, 20 - 25 May 2005, pp.217-224
- XIII. **Alternative Policies by Heuristics for Dynamic Scheduling of a Two-Class Base-Stock Controlled System**
Avşar Z. M., Kat B.
20th European Conference on Operational Research EURO XX, Rodos, Greece, 4 - 07 July 2004, pp.216
- XIV. **Alternative Policies by Heuristics for Dynamic Scheduling of a Two-Class Base-Stock Controlled System**
Avşar Z. M., Kat B.
MSOM Conference, The Manufacturing and Service Operations Management Society, Eindhoven, Netherlands, 1 - 02 July 2004, pp.2
- XV. **İki Sınıflı Baz-Stok Denetimindeki bir Sistemin Dinamik Çizelgelemesi için Sezgisel Yöntemlerle Geliştirilen Alternatif Politikalar (Alternative Policies by Heuristics for Dynamic Scheduling of a Two-Class Base-Stock Controlled System)**
Kat B., Avşar Z. M.
Yöneylem Araştırması ve Endüstri Mühendisliği 24. Ulusal Kongresi YA/EM'2004, Gaziantep, Turkey, 15 - 18 June 2004, pp.4-6
- XVI. **An Approximate Model for Assembly Systems Controlled by Base-Stock Policies**
Avşar Z. M., Zijm H.
EURO/INFORMS Joint International Meeting, İstanbul, Turkey, 6 - 10 July 2003, pp.112
- XVII. **Capacitated Multi-Stage Maintenance and Manufacturing Systems**
Avşar Z. M., Zijm H.
Workshop on Stochastic Models of Manufacturing and Logistic Systems, Eindhoven, Netherlands, 24 - 26 April 2001

- XVIII. **The Single-Site, Two-Indenture Models for Repairable Item Systems**
Avşar Z. M., Zijm H.
INFORMS Conference, Institute for Operations Research and the Management Sciences, Texas, United States Of America, 5 - 08 November 2000
- XIX. **Two-Echelon Inventory Systems for Repairable Items with Limited Capacities**
Avşar Z. M., Zijm H.
17th European Conference on Operational Research EURO XVII, Budapest, Hungary, 16 - 19 July 2000
- XX. **Undiscounted Two-Person Zero-Sum Communicating Stochastic Games**
Baykal-Gürsoy M., Avşar Z. M.
38th IEEE Conference on Decision and Control, IEEE Control Systems Society, Institute of Electrical and Electronics Engineers, Arizona, United States Of America, 7 - 10 December 1999, pp.576-581
- XXI. **İki Kişilik Sıfır Toplamlı İletişen Rassal Oyunlar için bir Algoritma**
Avşar Z. M., Baykal-Gürsoy M.
19. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi YA/EM'98, Ankara, Turkey, 25 - 26 June 1998, pp.62
- XXII. **İki Kişilik Sıfır Toplamlı Rassal Oyunlar için bir Ayrışım Algoritması**
Avşar Z. M., Baykal-Gürsoy M.
19. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi YA/EM'98, Ankara, Turkey, 25 - 26 June 1998, pp.62
- XXIII. **Yerine Koyulabilir Talep Altında Envanter Kontrolü: Rassal Oyunlar Kuramının bir Uygulaması**
Avşar Z. M., Baykal-Gürsoy M.
19. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Kongresi YA/EM'98, Ankara, Turkey, 25 - 26 June 1998, pp.27
- XXIV. **Two-Person Zero-Sum Communicating Stochastic Games**
Avşar Z. M., Baykal-Gürsoy M.
INFORMS Conference, Institute for Operations Research and the Management Sciences, Texas, United States Of America, 26 - 29 October 1997
- XXV. **Markov Decision Processes with Restricted Observations: Finite Horizon Model**
Serin Y. Y., Avşar Z. M.
Symposium on Applied Mathematical Programming and Modeling APMOD93, Budapest, Hungary, 6 - 08 January 1993, pp.521-528

Scientific Refereeing

Transportation Research Part E-Logistics And Transportation Review, SCI Journal, September 2019

Transportation Research Part E-Logistics And Transportation Review, SCI Journal, November 2017

OR SPECTRUM, Journal Indexed in SCI-E, December 2015

European Journal Of Operational Research, Journal Indexed in SCI-E, January 2014

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, Journal Indexed in SCI-E, January 2013

NAVAL RESEARCH LOGISTICS, SCI Journal, March 2012

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, Journal Indexed in SCI-E, October 2011

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, Journal Indexed in SCI-E, June 2011

NAVAL RESEARCH LOGISTICS, SCI Journal, June 2010

COMPUTERS IN INDUSTRY, Journal Indexed in SCI-E, April 2010

ANNALS OF OPERATIONS RESEARCH, SCI Journal, March 2010

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, Journal Indexed in SCI-E, March 2010

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, Journal Indexed in SCI-E, June 2009

ANNALS OF OPERATIONS RESEARCH, SCI Journal, April 2009

Technopark, Middle East Technical University, Turkey, February 2009

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, Journal Indexed in SCI-E, September 2008

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, Journal Indexed in SCI-E, September 2007
Universities of Other Countries Supported Project, Technische Universiteit Eindhoven, Netherlands, June 2007
M&SOM-MANUFACTURING & SERVICE OPERATIONS MANAGEMENT, Journal Indexed in SCI-E, January 2007
INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS, Journal Indexed in SCI-E, January 2006
OR SPECTRUM, Journal Indexed in SCI-E, October 2003
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, Journal Indexed in SCI-E, February 2003

Tasks In Event Organizations

Avşar Z. M., Süral H., TU/e-OPAC and METU-IE 1st Joint Workshop, Workshop Organization, Ankara, Turkey, Ekim 2005

Metrics

Publication: 40
Citation (WoS): 128
Citation (Scopus): 152
H-Index (WoS): 6
H-Index (Scopus): 7

Non Academic Experience

Orta Doğu Teknik Üniversitesi
Bilkent Üniversitesi
Eindhoven Teknik Üniversitesi
Bilkent Üniversitesi
Rutgers Üniversitesi
Orta Doğu Teknik Üniversitesi