

## **Prof. ESRA KARSAKAL**

### **Personal Information**

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### **Education Information**

Doctorate, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, Turkey 1995 - 2000

Postgraduate, Lancaster University, Operational Research, United Kingdom 1994 - 1995

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, Turkey 1990 - 1994

### **Foreign Languages**

English, C1 Advanced

### **Dissertations**

Doctorate, Multiobjective decision making: An interactive approach and discrete representation of the efficient frontier, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2000

Postgraduate, Thomas Bolton Project, Lancaster University, Operational Research, 1995

### **Research Areas**

Engineering and Technology

### **Academic Titles / Tasks**

Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2016 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2008 - 2016

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2002 - 2016

Research Assistant, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 1995 - 2002

### **Academic and Administrative Experience**

Academic Performance D. Board Member, Middle East Technical University, Faculty of Engineering, Department of

Industrial Engineering, 2020 - Continues

Head of Department, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2020 - Continues

Erasmus Coordinator, Middle East Technical University, Faculty of Engineering, 2016 - 2020

Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2010 - 2011

## Courses

Decision Models, Postgraduate, 2019 - 2020

## Advising Theses

Karacakal E., Karacakal O., HETEROGENOUS SENSOR DATA FUSION, Postgraduate, İ.Hakkı(Student), Continues

Karacakal E., Karacakal O., A VEHICLE ROUTING MODEL FOR AERIAL SURVEILLANCE WITH HETEROGENOUS FLEET, Postgraduate, K.Tarakçı(Student), Continues

Karacakal E., Karacakal O., ANALYSIS OF AIR DEFENSE EFFECTIVENESS OF A NAVAL TASK GROUP UNDER PARTIAL AND FULL COORDINATION, Postgraduate, B.İlkin(Student), Continues

Karacakal E., Karacakal O., EXTENDING AN OUTRANKING MULTIPLE CRITERIA DECISION MAKING METHOD TO DIFFERENTIATE GAIN AND LOSS UNDER FULL AND PARTIAL INFORMATION, Postgraduate, H.Şentürk(Student), Continues

Karacakal E., Karacakal O., TARGET CLASSIFICATION UNDER MULTI SENSOR ENVIRONMENT, Postgraduate, B.Atıcı(Student), 2019

Karacakal E., A MATHEMATICAL PROGRAMMING EVALUATION APPROACH FOR MULTIPLE CRITERIA SORTING PROBLEMS, Postgraduate, M.Civelek(Student), 2019

KARASAKAL E., A MULTIOBJECTIVE APPROACH TO ASSEMBLY LINE PART FEEDING PROBLEM, Postgraduate, R.KIZILYILDIRIM(Student), 2018

KARASAKAL E., Multiobjective missile rescheduling problem, Doctorate, A.SİLAV(Student), 2017

AZİZOĞLU M., KARASAKAL E., Bicriteria bin packing problem with deviation based objectives, Postgraduate, A.ÖYLEK(Student), 2015

KARASAKAL E., Multiobjective aerial surveillance problem, Postgraduate, G.MARAŞ(Student), 2013

ÖZDEMİREL N. E. , KARASAKAL E., An interactive preference based evolutionary algorithm for the clustering problem, Postgraduate, K.DEMİRTAŞ(Student), 2011

İYİGÜN C., KARASAKAL E., A multiple criteria sorting approach based on distance functions, Postgraduate, B.ÇELİK(Student), 2011

KARASAKAL E., An interactive evolutionary algorithm for the multiobjective relocation problem with partial coverage, Postgraduate, B.ORBAY(Student), 2011

ÖZDEMİREL N. E. , KARASAKAL E., An interactive preference based multiobjective evolutionary algorithm for the clustering problem, Postgraduate, K.Demirtaş(Student), 2011

KARASAKAL E., A DEA based sorting approach for industrial R&D projects, Postgraduate, P.AKER(Student), 2010

KARASAKAL E., Multiple criteria sorting methods based on support vector machines, Postgraduate, A.DUMAN(Student), 2010

KARASAKAL E., Bi-objective facility location problems in the presence of partial coverage, Postgraduate, A.SİLAV(Student), 2009

KARASAKAL E., Interval priority weight generation from interval comparison matrices in analytic hierarchy process, Postgraduate, U.ÖZTÜRK(Student), 2009

KÖKSAL G., KARASAKAL E., A comparison of data mining methods for prediction and classification types of quality problems, Postgraduate, Z.ANAKLI(Student), 2009

KARASAKAL E., Multiple criteria project selection problems, Postgraduate, M.ÇAĞLAR(Student), 2009

SÜRAL H., KARASAKAL E., A genetic algorithm for the biobjective traveling salesman problem with profits, Postgraduate,

S.KARADEMİR(Student), 2008  
 KARASAKAL E., R&D project performance evaluation with multiple and interdependent criteria, Postgraduate, Z.TOHUMCU(Student), 2007  
 KARASAKAL E., Multi-criteria decision making with interdependent criteria using prospect theory, Postgraduate, A.BOZKURT(Student), 2007  
 SÜRAL H., KARASAKAL E., The biobjective traveling salesman problem with profit, Postgraduate, Ö.ŞİMŞEK(Student), 2007  
 KARASAKAL E., Hierarchical maximal covering location problem with referral in the presence of partial coverage, Postgraduate, Ö.TÖREYEN(Student), 2007  
 KARASAKAL E., Hybrid ranking approaches based on data envelopment analysis and outranking relations, Postgraduate, U.ERYILMAZ(Student), 2006  
 KARASAKAL E., Undesirable and semi-desirable facility location problems, Postgraduate, D.NADİRLER(Student), 2004  
 KARASAKAL E., Interactive approaches based on outranking relations for multicriteria decision making problems with imprecise information, Postgraduate, G.ÖZEROL(Student), 2003  
 KARASAKAL E., Interactive approaches based on outranking relations for multicriteria decision making problems with imprecise information, Postgraduate, G.ÖZEROL(Student), 2003  
 AZİZOĞLU M., KARASAKAL E., Bi-objective bin packing problems, Postgraduate, I.LILİCAK(Student), 2003

## Jury Memberships

Associate Professor Exam, Associate Professor Exam, Yıldız Teknik Üniversitesi, July, 2019  
 Associate Professor Exam, Associate Professor Exam, Yıldız Teknik Üniversitesi, July, 2019  
 PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Başkent Üniversitesi, June, 2019  
 PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Başkent Üniversitesi, June, 2019  
 Associate Professor Exam, Associate Professor Exam, İhsan Doğramacı Bilkent Üniversitesi, March, 2019  
 PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Başkent Üniversitesi, December, 2018  
 Associate Professor Exam, Associate Professor Exam, Middle East Technical University, October, 2018  
 Associate Professor Exam, Associate Professor Exam, Middle East Technical University, June, 2018  
 Associate Professor Exam, Associate Professor Exam, Middle East Technical University, June, 2018  
 Associate Professor Exam, Associate Professor Exam, Orta Doğu Teknik Üniversitesi, June, 2018  
 PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Başkent Üniversitesi, June, 2018  
 Appointment Academic Staff, Appointment Academic Staff, Hacettepe Üniversitesi, January, 2018  
 Appointment Academic Staff, Appointment Academic Staff, Orta Doğu Teknik Üniversitesi, January, 2018

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **A multi-objective approach for dynamic missile allocation using artificial neural networks for time sensitive decisions**  
 Karasakal O., KARASAKAL E., Silav A.  
 Soft Computing, vol.25, no.15, pp.10153-10166, 2021 (Journal Indexed in SCI)
- II. **Ranking using PROMETHEE when weights and thresholds are imprecise: A data envelopment analysis approach**  
 KARASAKAL E., Eryilmaz U., Karasakal O.  
 JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, 2021 (Journal Indexed in SCI)
- III. **Bi-objective dynamic weapon-target assignment problem with stability measure**  
 Silav A., Karasakal E., Karasakal O.  
 Annals Of Operations Research, vol.1, pp.1-19, 2021 (Journal Indexed in SCI)
- IV. **Multiobjective aerial surveillance over disjoint rectangles**

Karasakal O., KARASAKAL E., Maraş G.

Computers and Industrial Engineering, vol.148, 2020 (Journal Indexed in SCI)

- V. **Bi-objective missile rescheduling for a naval task group with dynamic disruptions**  
Silav A., Karasakal O., KARASAKAL E.  
NAVAL RESEARCH LOGISTICS, vol.66, no.7, pp.596-615, 2019 (Journal Indexed in SCI)
- VI. **A multicriteria sorting approach based on data envelopment analysis for R&D project selection problem**  
KARASAKAL E., Aker P.  
OMEGA-INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE, vol.73, pp.79-92, 2017 (Journal Indexed in SCI)
- VII. **A multi-objective genetic algorithm for a bi-objective facility location problem with partial coverage**  
KARASAKAL E., Silav A.  
TOP, vol.24, no.1, pp.206-232, 2016 (Journal Indexed in SCI)
- VIII. **A probabilistic multiple criteria sorting approach based on distance functions**  
ÇELİK B., KARASAKAL E., İYİĞÜN C.  
EXPERT SYSTEMS WITH APPLICATIONS, vol.42, no.7, pp.3610-3618, 2015 (Journal Indexed in SCI)
- IX. **AN INTERACTIVE PARTITIONING APPROACH FOR MULTIOBJECTIVE DECISION MAKING UNDER A GENERAL MONOTONE UTILITY FUNCTION**  
KARASAKAL E., Koksalan M.  
INTERNATIONAL JOURNAL OF INFORMATION TECHNOLOGY & DECISION MAKING, vol.12, no.5, pp.969-997, 2013 (Journal Indexed in SCI)
- X. **R&D Project Performance Evaluation With Multiple and Interdependent Criteria**  
Tohumcu Z., KARASAKAL E.  
IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT, vol.57, no.4, pp.620-633, 2010 (Journal Indexed in SCI)
- XI. **Generating a Representative Subset of the Nondominated Frontier in Multiple Criteria Decision Making**  
KARASAKAL E., Koksalan M.  
OPERATIONS RESEARCH, vol.57, no.1, pp.187-199, 2009 (Journal Indexed in SCI)
- XII. **An interactive solution approach for a bi-objective semi-desirable location problem**  
KARASAKAL E., Nadirler D.  
JOURNAL OF GLOBAL OPTIMIZATION, vol.42, no.2, pp.177-199, 2008 (Journal Indexed in SCI)
- XIII. **Interactive outranking approaches for multicriteria decision-making problems with imprecise information**  
Oezerol G., KARASAKAL E.  
JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, vol.59, no.9, pp.1253-1268, 2008 (Journal Indexed in SCI)
- XIV. **A parallel between regret theory and outranking methods for multicriteria decision making under imprecise information**  
Oezerol G., KARASAKAL E.  
THEORY AND DECISION, vol.65, no.1, pp.45-70, 2008 (Journal Indexed in SSCI)
- XV. **Mixed integer programming-based solution procedure for single-facility location with maximin of rectilinear distance**  
Nadirler D., KARASAKAL E.  
JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, vol.59, no.4, pp.563-570, 2008 (Journal Indexed in SCI)
- XVI. **An interactive approach for multiobjective decision making**  
Koksalan M., Karasakal E.  
JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, vol.57, no.5, pp.532-540, 2006 (Journal Indexed in SCI)
- XVII. **A maximal covering location model in the presence of partial coverage**  
Karasakal O., Karasakal E.  
COMPUTERS & OPERATIONS RESEARCH, vol.31, no.9, pp.1515-1526, 2004 (Journal Indexed in SCI)
- XVIII. **Incorporating wealth information into a multiple criteria decision making model**  
Karasakal E., Michalowski W.  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.150, no.1, pp.204-219, 2003 (Journal Indexed in SCI)

**XIX. A simulated annealing approach to bicriteria scheduling problems on a single machine**

Karasakal E., Koksalan M.

JOURNAL OF HEURISTICS, vol.6, no.3, pp.311-327, 2000 (Journal Indexed in SCI)

### Articles Published in Other Journals

- I. **A distance based multiple criteria sorting method without class thresholds**  
KARASAKAL E., Civelek M.  
Journal of Multi-Criteria Decision Analysis, vol.28, pp.134-143, 2021 (Journal Indexed in ESCI)
- II. **Entegre lojistik sistemler için yeni bir onarım ağı yapısı önerisi**  
Bıçakçı İ., İç Y. T. , Karasakal E., Dengiz B.  
Journal of Turkish Operations Management, vol.4, no.2, pp.409-423, 2020 (International Refereed University Journal)
- III. **AN APPROACH FOR EXTENDING PROMETHEE TO REFLECT CHOICE BEHAVIOUR OF THE DECISION MAKER**  
Karasakal E., Karasakal O., Bozkurt A.  
Endüstri Mühendisliği, vol.30, no.2, pp.124-140, 2019 (Other Refereed National Journals)

### Books & Book Chapters

- I. **Heterogeneous Sensor Data Fusion for Target Classification Using Adaptive Distance Function**  
Atıcı B., Karasakal E., Karasakal O.  
in: Multiple Criteria Decision Making: Beyond the Information Age, Y.I. Topcu,Ö. Özaydın,Ö. Kabak,Ş. Önsel Ekici, Editor, Springer, London/Berlin , London, pp.1-35, 2021

### Refereed Congress / Symposium Publications in Proceedings

- I. **Multiple Criteria Target Classification Using Heterogeneous Sensor Data**  
Karasakal O., Atıcı B., Karasakal E.  
25th International Conference on Multiple Criteria Decision Making, İstanbul, Turkey, 16 June 2019, pp.145
- II. **Extending an Outranking Multiple Criteria Decision Making Method to Differentiate Gain and Loss**  
Karasakal E., Şentürk H., Karasakal O.  
5th International Conference on Engineering Sciences, Ankara, Turkey, 19 September 2019, pp.35
- III. **A Mathematical Programming Approach for Multiple Criteria Sorting Problems**  
Civelek M., Karasakal E.  
25th International Conference on Multiple Criteria Decision Making, İstanbul, Turkey, 16 June 2019, pp.144
- IV. **Otomatik Hedef Sınıflandırma Sistemleri İçin Çok Kriterli Hedef Sınıflandırma**  
Atıcı B., Karasakal E., Karasakal O.  
39. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Konferansı, Ankara, Turkey, 12 June 2019, pp.69
- V. **Çok Kriterli Sıralı Sınıflandırma için Matematiksel Programlama Tabanlı Bir Yöntem**  
Civelek M., Karasakal E.  
39. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Konferansı, İstanbul, Turkey, 12 June 2019, pp.69
- VI. **Montaj Üretim Hattı Besleme Problemi, için Çok ~ Amaçlı Bir Yaklaşım**  
Kızılyıldırım R., Karasakal E.  
38. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Konferansı, Eskişehir, Turkey, 26 June 2018, pp.68
- VII. **Pompaj Depolamalı Hidroelektrik Santrallerinin Ekonomik Fizibilite Değerlendirmesi için Bir Yöntem**  
Canbilen T., Karasakal E., Savaşaneril Tüfekci S., Ergen, Ergen A., Karalar İ., Oltulu A., Özudođru C.  
38. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Konferansı, Eskişehir, Turkey, 26 June 2018, pp.87-88

- VIII. **PROMETHEE Yöntemini Beklenti Teorisi ile Uyumlandıran Bütünleşik bir Yaklaşım**  
Karasakal O., Karasakal E.  
38. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği Konferansı, Eskişehir, Turkey, 26 June 2018, pp.83
- IX. **Missile Target Rescheduling Problem of a Naval Task Group**  
Silav A., KARASAKAL E., Karasakal O.  
28th European Conference on Operational Reserach, 3 - 06 July 2016
- X. **Bir Deniz Görev Grubu için Satıhtan Havaya Güdümlü Mermilerin Dinamik Çizelgelemesi**  
Karasakal O., KARASAKAL E., Silav A.  
YA/EM 2016 Yöneylem Araştırması/Endüstri Mühendisliği 36. Ulusal Kongresi, Turkey, 13 - 15 July 2016
- XI. **Çok Amaçlı Havadan Gözetleme Problemi**  
KARASAKAL E., Karasakal O., Maraş G.  
35th Operations Research and Industrial Engineering National Conference, Turkey, 8 - 10 September 2015, pp.56
- XII. **Satıhtan Havaya Güdümlü Mermi Yeniden Tahsis Problemi için Yapay Sinir Ağlarını Kullanan Çok Amaçlı bir Yaklaşım**  
Silav A., KARASAKAL E., Karasakal O.  
35th Operations Research and Industrial Engineering National Conference, Turkey, 8 - 10 September 2015, pp.55
- XIII. **A Biobjective Approach based on PROMETHEE V for Project Selection Problems**  
Çağlar M., KARASAKAL E.  
29th Operations Research and Industrial Engineering National Conference, Turkey, 1 - 03 June 2009
- XIV. **Aralık Değerlerden Oluşan Karşılaştırma Matrislerinden Öncelik Aralıkları Belirlemek için Bir Yaklaşım**  
Öztürk U., KARASAKAL E.  
29th Operations Research and Industrial Engineering National Conference, Turkey, 1 - 03 June 2009
- XV. **A Genetic Algorithm for the Biobjective Traveling Salesman Problem with Profits**  
Eryılmaz U., KARASAKAL E.  
28th Operations Research and Industrial Engineering National Conference, Turkey, 1 - 03 July 2008
- XVI. **AR GE Projelerinin Performansının Değerlendirilmesi için Çok Kriterli Karar Verme Yaklaşımı**  
Tohumcu Z., KARASAKAL E.  
SAVTEK 2008, Turkey, 2 - 04 June 2008, vol.1, pp.437-445
- XVII. **Veri Zarflama Analizi ve Baskınlık İlişkileri Metodlarını Temel Alan Hibrid Bir Sıralama Metodu**  
Eryılmaz U., KARASAKAL E.  
26th Operations Research and Industrial Engineering National Conference, Turkey, 3 - 05 July 2006, pp.498-501
- XVIII. **Project Ranking with Interdependent Criteria using Prospect Theory**  
KARASAKAL E., Karasakal O., Akgün S.  
35th International Conference on Computers and Industrial Engineering, 1 - 03 June 2005, vol.1, pp.1081-1084
- XIX. **Kısmi Kapsamanın Olduğu Durumda İki Amaçlı Yerleşim Problemi**  
Karasakal O., KARASAKAL E.  
23rd Operations Research and Industrial Engineering National Conference, Turkey, 1 - 04 July 2002, pp.13
- XX. **TÜBİTAK TİDEB Öğrenin Yönetim Sistemi Tasarımı**  
KÖKSAL G., Saatçioğlu Ö., Doğrusöz H., KARASAKAL E., ALTEKİN F. T., ALTEKİN F. T.  
21th Operations Research and Industrial Engineering National Conference, Turkey, 5 - 07 June 2000, pp.386-389
- XXI. **EUREKA için Öğrenen Yönetim Sistemi Tasarımı Learning Management System Design for EUREKA**  
Saatçioğlu Ö., Doğrusöz H., KÖKSAL G., KARASAKAL E., Altekin T., ALTEKİN F. T., Arıkan C.  
8th National Quality Conference Proceedings, Turkey, 1 - 03 November 1999

## Scientific Refereeing

ENDÜSTRİ MÜHENDİSLİĞİ, National Scientific Refreed Journal, October 2019

Multiple Criteria Decision Making Beyond the Information Age, Chapter Scientific / Professional Book Published by Renowned Publishing Houses, October 2019

Computational and Applied Mathematics, Other Indexed Journal, February 2019  
Asia-Pacific Journal Of Operational Research, Journal Indexed in SCI-E, December 2018  
INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS, Journal Indexed in SCI-E, November 2018  
OMEGA-INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE, Journal Indexed in SSCI, November 2018  
JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, Journal Indexed in SCI-E, October 2018  
INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS, Journal Indexed in SCI-E, June 2018  
INTERNATIONAL JOURNAL OF INDUSTRIAL ENGINEERING-THEORY APPLICATIONS AND PRACTICE, Journal Indexed in SCI-E, April 2018  
EXPERT SYSTEMS WITH APPLICATIONS, Journal Indexed in SCI-E, March 2018  
SCIENTOMETRICS, Journal Indexed in SSCI, February 2018  
The Open Cybernetics & Systemics Journal, Other Indexed Journal, February 2018  
OPERATIONAL RESEARCH, Journal Indexed in SCI-E, February 2018  
JOURNAL OF SCIENCE AND ENGINEERING, Other Journals, February 2018  
EURO JOURNAL ON DECISION PROCESSES, Journal Indexed in ESCI, January 2018

### **Tasks In Event Organizations**

Karasakal E., 38. Yöneylem Araştırması Endüstri Mühendisliği Ulusal Kongresi, Scientific Congress, Eskişehir, Turkey, Haziran 2018

### **Citations**

Total Citations (WOS):273

h-index (WOS):8