

Prof. Banu SOYLU

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: A-9624-2016

Yoksis Researcher ID: 141334

Education Information

Doctorate, Middle East Technical University, Endüstri Mühendisliği, Turkey 2002 - 2007

Postgraduate, Middle East Technical University, Endüstri Mühendisliği, Turkey 1999 - 2002

Undergraduate, Erciyes University, Mühendislik Fakültesi, Endüstri Mühendisliği, Turkey 1994 - 1998

Dissertations

Doctorate, An Evolutionary Algorithm for Multiple Criteria Problems, Orta Doğu Teknik Üniversitesi, Endüstri Mühendisliği, Endüstri Mühendisliği, 2007

Postgraduate, A Mixed Model Flow Line Sequencing Problem with Makespan Minimization, Orta Doğu Teknik Üniversitesi, Endüstri Mühendisliği, Endüstri Mühendisliği, 2002

Research Areas

Computer Learning, Evolutionary Computing, Human Computer Interaction, Neural Networks, Industrial Engineering, Stochastic Modeling, Stochastic Processes, Optimization Theory and Methods, Multiobjective Optimization, Linear Programming, Integer and Mixed Integer Programming, Quality and Reliability, Decision Theory, Supply Chain and Logistics Management, Engineering and Technology

Academic Titles / Tasks

Professor, Erciyes University, Mühendislik Fakültesi, Endüstri Mühendisliği, 2017 - Continues

Associate Professor, Erciyes University, Mühendislik Fakültesi, Endüstri Mühendisliği, 2012 - 2017

Assistant Professor, Clemson University, Mathematical Sciences, 2011 - 2012

Assistant Professor, Erciyes University, Mühendislik Fakültesi, Endüstri Mühendisliği, 2007 - 2012

Research Assistant, Middle East Technical University, Faculty Of Engineering, Endüstri Mühendisliği, 1999 - 2007

Academic and Administrative Experience

Erciyes University, 2015 - 2017

Erciyes University, 2008 - 2015

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **A flexible non-monotonic discretization method for pre-processing in supervised learning**
Şenozan H., SOYLU B.
Pattern Recognition Letters, vol.181, pp.77-85, 2024 (SCI-Expanded)
- II. **A linear multivariate decision tree with branch-and-bound components**
Engür E., SOYLU B.
Neurocomputing, vol.576, 2024 (SCI-Expanded)
- III. **Integrating preventive and predictive maintenance policies with system dynamics: A decision table approach**
Bilal Yıldız G., SOYLU B.
Advanced Engineering Informatics, vol.56, 2023 (SCI-Expanded)
- IV. **Relocating emergency service vehicles with multiple coverage and critical levels partition**
Yıldırım B., SOYLU B.
Computers and Industrial Engineering, vol.177, 2023 (SCI-Expanded)
- V. **A multiobjective post-sales guarantee and repair services network design problem**
Yıldız G. B., Soylu B.
International Journal of Production Economics, vol.216, pp.305-320, 2019 (SCI-Expanded)
- VI. **A multiobjective hub-airport location problem for an airline network design**
SOYLU B., Katip H.
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.277, no.2, pp.412-425, 2019 (SCI-Expanded)
- VII. **The search-and-remove algorithm for biobjective mixed-integer linear programming problems**
SOYLU B.
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.268, no.1, pp.281-299, 2018 (SCI-Expanded)
- VIII. **An algorithm for approximating the Pareto set of the multiobjective set covering problem**
Weerasena L., Wiecek M. M., SOYLU B.
ANNALS OF OPERATIONS RESEARCH, vol.248, pp.493-514, 2017 (SCI-Expanded)
- IX. **Fathoming rules for biobjective mixed integer linear programs: Review and extensions**
BELOTTI P., SOYLU B., Wiecek M. M.
DISCRETE OPTIMIZATION, vol.22, pp.341-363, 2016 (SCI-Expanded)
- X. **An exact algorithm for biobjective mixed integer linear programming problems**
SOYLU B., Yıldız G. B.
COMPUTERS & OPERATIONS RESEARCH, vol.72, pp.204-213, 2016 (SCI-Expanded)
- XI. **A general variable neighborhood search heuristic for multiple traveling salesmen problem**
SOYLU B.
COMPUTERS & INDUSTRIAL ENGINEERING, vol.90, pp.390-401, 2015 (SCI-Expanded)
- XII. **Heuristic approaches for biobjective mixed 0-1 integer linear programming problems**
Soylu B.
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.245, no.3, pp.690-703, 2015 (SCI-Expanded)
- XIII. **Multi-criteria inventory classification with reference items**
SOYLU B., Akyol B.
COMPUTERS & INDUSTRIAL ENGINEERING, vol.69, pp.12-20, 2014 (SCI-Expanded)
- XIV. **A preference ordered classification for a multi-objective max-min redundancy allocation problem**
SOYLU B., Ulusoy S. K.
COMPUTERS & OPERATIONS RESEARCH, vol.38, no.12, pp.1855-1866, 2011 (SCI-Expanded)
- XV. **A multi-criteria sorting procedure with Tchebycheff utility function**
Soylu B.
COMPUTERS & OPERATIONS RESEARCH, vol.38, no.8, pp.1091-1102, 2011 (SCI-Expanded)
- XVI. **Bicriteria p-Hub Location Problems and Evolutionary Algorithms**
Koksalan M., SOYLU B.
INFORMS JOURNAL ON COMPUTING, vol.22, no.4, pp.528-542, 2010 (SCI-Expanded)

- XVII. INTEGRATING PROMETHEEII WITH THE TCHEBYCHEFF FUNCTION FOR MULTI CRITERIA DECISION MAKING
Soylu B.
INTERNATIONAL JOURNAL OF INFORMATION TECHNOLOGY & DECISION MAKING, vol.9, no.4, pp.525-545, 2010 (SCI-Expanded)
- XVIII. A Favorable Weight-Based Evolutionary Algorithm for Multiple Criteria Problems
SOYLU B., Koksalan M.
IEEE TRANSACTIONS ON EVOLUTIONARY COMPUTATION, vol.14, no.2, pp.191-205, 2010 (SCI-Expanded)
- XIX. Flow shop-sequencing problem with synchronous transfers and makespan minimization
Soylu B., Kirca Ö., Azizoğlu M.
INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.45, no.15, pp.3311-3331, 2007 (SCI-Expanded)

Articles Published in Other Journals

- I. Multi-criteria Warehouse Space Allocation Problem and an Application
SOYLU B.
JOURNAL OF POLYTECHNIC-POLITEKNIK DERGİSİ, vol.20, no.3, pp.613-621, 2017 (ESCI)
- II. A branch-and-bound algorithm for biobjective mixed-integer programs
BELOTTI P., SOYLU B., WIECEK M.
Optimization Online, 2013 (Non Peer-Reviewed Journal)
- III. Tedarikçinin Süreçlerini İyileştirme Amaçlı Tedarikçi Seçim Problemi
GÖKALP B., SOYLU B.
Endüstri Mühendisliği Dergisi, vol.2011, pp.4-15, 2011 (Peer-Reviewed Journal)
- IV. Öğretim Üyelerinin İş Yükü Seviyelerinin Bir Analitik Ağ Modeli ile Değerlendirilmesi: Mühendislik Fakültesinde Bir Uygulama
BULUT K., SOYLU B.
Erciyes Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.25, pp.150-167, 2009 (Peer-Reviewed Journal)

Books & Book Chapters

- I. A Digital Twin-Based Decision Support System for Dynamic Labor Planning
Soylu B., Yıldız G. B.
in: Advances in Intelligent Manufacturing and Service System Informatics. IMSS 2023. Lecture Notes in Mechanical Engineering, Şen Z, Uygun Ö, Erden C, Editor, Springer, London/Berlin, İstanbul, pp.214-223, 2023
- II. Blockchain Enabled Lateral Transshipment System for the Redistribution of Unsold Textile Products in a Circular Economy
Gökbunar H. B., Soylu B.
in: International Symposium on Intelligent Manufacturing and Service Systems. IMSS 2023. Lecture Notes in Mechanical Engineering, Şen Z, Uygun Ö, Erden C, Editor, Springer, London/Berlin, İstanbul, pp.630-640, 2023
- III. Risk Değerlendirme Uygulama Alanları
SOYLU B.
in: Risk Değerlendirmesi, M. Zeydan, Editor, Atatürk Üniversitesi Açık Öğretim Fakültesi Yayınları, pp.7-16, 2015
- IV. An Evolutionary Algorithm for the Multi-objective Multiple Knapsack Problem
SOYLU B., KÖKSALAN M. M.
in: Cutting-Edge Research Topics on Multiple Criteria Decision Making, Yong Shi, Shouyang Wang, Yi Peng, Jianping Li, Yong Zeng, Editor, Springer-Verlag, Berlin-Heidelberg, pp.1-8, 2009

Refereed Congress / Symposium Publications in Proceedings

- I. **Blockchain Enabled Lateral Transshipment System for the Redistribution of Unsold Textile Products in a Circular Economy**
Gökbunar H. B., SOYLU B.
12th International Symposium on Intelligent Manufacturing and Service Systems, IMSS 2023, İstanbul, Turkey, 26 - 28 May 2023, pp.630-640
- II. **A Digital Twin-Based Decision Support System for Dynamic Labor Planning**
SOYLU B., YILDIZ G. B.
12th International Symposium on Intelligent Manufacturing and Service Systems, IMSS 2023, İstanbul, Turkey, 26 - 28 May 2023, pp.214-223
- III. **A special case of the p-hub center network problem**
ENGÜR E., SOYLU B.
International Conference on Data Science, Machine Learning and Statistics (DMS-2019), 26 - 29 June 2019
- IV. **A new formulation for the uncapacitated p-hub center problem**
SOYLU B., ENGÜR E.
European Conference on Science, Art Culture ECSAC2018, Antalya, Turkey, 19 - 22 April 2018
- V. **Shifting from job-shop to cellular manufacturing in a factory with high production flexibility: A simulation model**
SOYLU B., KILINÇ K.
European Conference on Science, Art Culture ECSAC2018, Antalya, Turkey, 19 - 22 April 2018
- VI. **Stochastic Modeling of a Refrigerated Food Logistics Chain in order to Optimize Food Quality**
SOYLU B.
International Advanced Researches and Engineering Congress-2017, Osmaniye, Turkey, 16 - 18 November 2017
- VII. **Improving Logistics Operations in a Cold Supply Chain: An Experimental Analysis**
SOYLU B., BEKTAŞ H. S., KAYTANCI K., ERBAŞ A.
International Advanced Researches and Engineering Congress-2017, Osmaniye, Turkey, 16 - 18 November 2017
- VIII. **A Biobjective p-hub center problem**
SOYLU B., ENGÜR E.
2nd International Mediterranean Science and Engineering Congress (IMSEC2017), Adana, Turkey, 25 - 27 October 2017
- IX. **A biobjective p-hub median problem: properties and algorithms for the Pareto frontier**
SOYLU B., KATİP H.
2nd International Mediterranean Science and Engineering Congress (IMSEC 2017), Adana, Turkey, 25 - 27 October 2017
- X. **A Biobjective Reverse Logistics NetworkDesign Problem: Solution Methods and an Application**
YILDIZ G. B., SOYLU B.
2nd International Mediterranean Science and Engineering Congress (IMSEC 2017), Adana, Turkey, 25 - 27 October 2017
- XI. **Determination and Modelling of the Aflatoxin Productionof Aflatoxigenic Aspergillus parasiticus in Red Pepper StoredUnder Different Water Activities (aw) and Temperature**
KESMEN Z., YAPAR N., SOYLU B.
2nd International Mediterranean Science and Engineering Congress (IMSEC2017), Adana, Turkey, 25 - 27 October 2017
- XII. **YÜKSEK ÜRETİM ESNEKLİĞİNE SAHİP BİR İŞLETMEDE HÜCRESEL ÜRETİM SİSTEMİ TASARIMI**
KILINÇ K., SOYLU B.
37. YÖNEYLEM ARAŞTIRMASI VE ENDÜSTRİ MÜHENDİSLİĞİ ULUSAL KONGRESİ, İstanbul, Turkey, 5 - 07 July 2017
- XIII. **Discrimination of the origin of black tea samples: A data mining application**
SOYLU B., OKUYAN N., KESMEN Z., YETİM H.
International Conference on Agriculture, Forest, Food Sciences and Technologies, Nevşehir, Turkey, 15 - 17 May 2017
- XIV. **The design of a cold chain logistics network for perishable food products and an application**
SOYLU B., BEKTAŞ H. S., KAYTANCI K., ERBAŞ A.

International Conference on Agriculture, Forest, Food Science and Technologies, Nevşehir, Turkey, 15 - 17 May 2017

XV. **MULTI-FRAGMENT MELTING ANALYSIS SYSTEM (MFMAS) FOR IDENTIFICATION OF CANDIDA SPECIES**

KESMEN Z., ÇELİK M., ÖZKÖK F. Ö., Erdem Büyükkiraz M., Özbekar E., SOYLU B.

IWBBI 2017 (5th International Work-Conference on Bioinformatics and Biomedical Engineering), Granada, Spain, 26 - 28 April 2017, pp.44-48

XVI. **Effects of storage conditions on aflatoxin production and expression levels of some biosynthesis genes of Aspergillus flavus in red pepper**

SOYLU B., KESMEN Z., YAPAR N., YETİM H.

15th International Conference on Food Processing and Technology, Roma, Italy, 26 - 29 November 2016, vol.7, no.12, pp.65

XVII. **Local Branching Algorithm for Approximating the Pareto Set of the Multiobjective Set Covering Problem**

WEERASENA L., WIECEK M., SOYLU B.

INFORMS 2016 Annual Meeting, Nashville, 05 November 2016

XVIII. **İki Amaçlı Karışık Tamsayılı Doğrusal Programlama Problemleri için Yinelemeli Araştırma Algoritması**

SOYLU B.

36. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 12 July 2016

XIX. **An Algorithm to Approximate the Solutions of the Multiobjective Set Covering Problem**

WEERASENA L., SOYLU B., WIECEK M.

American Mathematical Society (AMS) Sectional Meeting, 01 March 2016

XX. **İki amaçlı karma 0-1 doğrusal programlama problemleri için tam sonuç veren bir algoritma**

YILDIZ G. B., SOYLU B.

YAEM, Ankara, Turkey, 9 - 11 September 2015

XXI. **Çoklu Gezgin Satıcı Problemi İçin Genel Komşuluk Arama Sezgiseli**

SOYLU B.

Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) 35. Ulusal Kongresi, Turkey, 9 - 11 September 2015

XXII. **An Exact Algorithm for Mixed 0-1 Integer Linear Programming Problems**

YILDIZ G. B., SOYLU B.

MCDM, Hamburg, Germany, 2 - 07 August 2015

XXIII. **Küme Kapsama Problemi ve Ağ Ömrünün En Büyütlenmesi**

KARA A., SOYLU B.

34. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 25 - 28 June 2014

XXIV. **An Algorithm to Determine Efficiency Scores in Large DEA Data Sets**

YILDIZ G. B., SOYLU B.

MCDM, Malaga, Spain, 17 - 21 June 2013

XXV. **A Bi-objective Mixed-Binary Set Covering Problem**

SOYLU B.

22nd International conference on Multiple Criteria decision Making, 15 June 2013

XXVI. **Advancing Branch-and-bound Techniques for Mixed-integer Multiobjective Programming**

BELOTTI P., SOYLU B., WIECEK M.

INFORMS 2012 Annual Meeting, Phoenix, AZ, US, 01 October 2012

XXVII. **Seeding-based Evolutionary Algorithms for the Multiobjective Set Covering Problem**

WEERASENA L., WIECEK M., SOYLU B.

CORS MOGP 2012, Niagara Falls-Toronto, CA, 01 June 2012

XXVIII. **A New Approach to Sort Inventory Items and An Application**

AKYOL B., YILDIZ G. B., SOYLU B.

INFORMS 2011 Annual Meeting, Charlotte, NC, US, 01 November 2011

XXIX. **An Interactive Sorting Method and its Application to Sorting Sectors**

- SOYLU B., KAYHAN B., KÖKSALAN M. M.
21st International Conference on Multiple Criteria Decision Making, 20 June 2011
- XXX. **A Bi-objective Max-Min Redundancy Allocation Problem and the Preference-ordered Classification**
SOYLU B., KAPAN ULUSOY S.
XXIVth Mini Euro Conference MEC-EurOpt 2010, Izmir University of Economics, 15 June 2010
- XXXI. **Süreç İyileştirme Amaçlı Tedarikçi seçim Problemi**
GÖKALP B., SOYLU B.
30. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 15 June 2010
- XXXII. **A Warehouse Space Allocation Problem in a Carpet Factory Considering Multiple Criteria**
SOYLU B.
23th European Conference on Operational Research, 05 July 2009
- XXXIII. **An Evolutionary Algorithm for the Multi-objective Multiple Knapsack Problem**
SOYLU B., Koksalan M.
20th International Conference on Multiple Criteria Decision Making, Chengdu, China, 21 - 26 June 2009, vol.35, pp.1-3
- XXXIV. **Çok Kriterli Sıralı Gruplara Ayırma Problemi için Tchebycheff Fayda Fonksiyonu Temelli Bir Yaklaşım**
SOYLU B.
29. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 15 June 2009
- XXXV. **A Multiple Criteria Sorting Approach with Tchebycheff Utility Function**
SOYLU B.
INFORMS Annual Meeting, Washington-DC, USA, 10 October 2008
- XXXVI. **Çok Kriterli ABC Stok Sınıflandırma Problemi için Tchebycheff Ölçüsü Temelli Bir Yaklaşım**
SOYLU B.
28. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 01 June 2008
- XXXVII. **Multiple Criteria Inventory Classification Problem**
SOYLU B.
HDM 2008 International Conference on Multivariate Statistical Modeling and High Dimensional Data Mining, 01 June 2008
- XXXVIII. **Öğretim Üyelerinin İş Yükü Seviyelerini Ölçmek için Bir Analitik Ağ Modeli ve Mühendislik Fakültesinde Bir Uygulama**
BULUT K., SOYLU B.
13. Ulusal Ergonomi Kongresi, Turkey, 01 December 2007
- XXXIX. **A Bi-criteria Hub Location Problem**
SOYLU B., KÖKSALAN M. M.
Euro XXII 22nd European Conference on Operational Research, Prague, Czech Republic, 08 July 2007
- XL. **İki Kriterli p-Merkez Üssü Yerleştirme Problemi ve Evrimci Bir Algoritma**
SOYLU B., KÖKSALAN M. M.
27. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 01 July 2007
- XLI. **A Multi-Criteria Evolutionary Algorithm for Generating the Efficient Frontier**
SOYLU B., KÖKSALAN M. M.
INFORMS 2006 International Conference, Hong Kong, 05 June 2006
- XLII. **Evolutionary Search for Efficient Solutions in Multiple Criteria Combinatorial Optimization**
SOYLU B., KÖKSALAN M. M.
18th International Conference on Multiple Criteria Decision Making, Chania, Greece, 01 June 2006
- XLIII. **A Favorable Weight Based Evolutionary Algorithm for Multiobjective Optimization Problems**
SOYLU B., KÖKSALAN M. M.
INFORMS Annual Meeting, San Francisco, USA, 05 November 2005
- XLIV. **Çok Amaçlı Birleşî Problemleri için Evrimci Bir Algoritma**
SOYLU B., KÖKSALAN M. M.
25. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 15 July 2005

- XLV. **An Evolutionary Algorithm for Multiobjective Combinatorial Optimization Problems**
SOYLU B., KÖKSALAN M. M.
35th International Conference of Computers & Industrial Engineering, Istanbul, Turkey, 05 June 2005
- XLVI. **An Evolutionary Algorithm for Multiobjective Combinatorial Optimization**
SOYLU B., KÖKSALAN M. M.
XI ELAVIO Latin American Summer Workshop on Operations Research, Bogota, Colombia, 01 June 2005
- XLVII. **Application of a Genetic Local Search Algorithm for Sequencing Problem on a Synchronous Flow Line**
SOYLU B.
XX 20th European Conference on Operational Research, Rhodes-Greece, 04 July 2004
- XLVIII. **A Genetic Local Search Algorithm for Sequencing Problem on a Synchronous Flow Line**
SOYLU B.
24. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 15 June 2004
- XLIX. **A Mixed Model Line Sequencing Problem with Makespan Minimization**
SOYLU B., KIRCA Ö., AZİZOĞLU M.
EURO/INFORMS International Meeting, Istanbul-Turkey, 01 June 2003
- L. **Karışık Modelli Montaj Hatlarında Toplam Çevrim Zamanının En Azlanması için Sıralama Problemi**
SOYLU B., KIRCA Ö., AZİZOĞLU M.
22. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 01 July 2002

Supported Projects

SOYLU B., ENGÜR E., Project Supported by Higher Education Institutions, İKİ AMAÇLI P-ADÜ MERKEZ VE ADÜ KAPSAMA PROBLEMLERİ, 2017 - 2018

SOYLU B., KARA A., Project Supported by Higher Education Institutions, Ağ Ömrünü Enbüyükleme Amaçlı Küme Kapsama Problemleri, 2013 - 2014

SOYLU B., YILDIZ G. B., Project Supported by Higher Education Institutions, Büyük Çaplı Veri Zarflama Analizi Modelleri İçin Yeni Yaklaşımlar, 2012 - 2013

SOYLU B., AKYOL B., YILDIZ G. B., Project Supported by Higher Education Institutions, Çok Kriterli ABC Stok Sınıflandırma Problemi için Yeni Bir Yaklaşım, 2011 - 2012

SOYLU B., TUBITAK Project, Sektörel Sıralı Sınıflandırma Problemi Ve Kosgeb Hizmet Teşvikleri İçin Öncelikli Sektörlerin Belirlenmesi, 2010 - 2011

SOYLU B., GÖKALP B., Project Supported by Higher Education Institutions, Süreç İyileştirme Amaçlı Tedarikçi Seçim Problemi, 2009 - 2010

SOYLU B., BULUT K., Project Supported by Higher Education Institutions, Türkiye'de Kullanılan Ulaştırma Modlarının Çok Kriterli Karar Verme Yöntemleri ile Değerlendirilmesi, 2009 - 2010

Metrics

Publication: 78
Citation (WoS): 366
Citation (Scopus): 427
H-Index (WoS): 12
H-Index (Scopus): 13

Congress and Symposium Activities

Çoklu Gezgin Satıcı Problemi İçin Genel Komşuluk Arama Sezgiseli, Attendee, Ankara, Turkey, 2015

İki amaçlı karma 0-1 doğrusal programlama problemleri için tam sonuç veren bir algoritma, Attendee, Turkey, 2015
An Exact Algorithm for Mixed 0-1 Integer Linear Programming Problems, Attendee, Hamburg, Germany, 2015

Awards

SOYLU B., En iyi bildiri (Best paper award), 2nd International Mediterranean Science and Engineering Congress, October 2017

Non Academic Experience

Clemson University

ORTA DOĞU TEKNİK ÜNİVERSİTESİ