

## Assoc. Prof. Mert BAL

### Personal Information

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### International Researcher IDs

ScholarID: -1zAA3MAAAAJ

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Publons / Web Of Science ResearcherID: AAJ-2857-2020

ScopusID: 57198207465

Yoksis Researcher ID: 174347

### Education Information

Doctorate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Matematik Mühendisliği, Turkey  
2001 - 2008

Postgraduate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Matematik Mühendisliği,  
Turkey 1999 - 2001

Undergraduate, Yildiz Technical University, Kimya Metalurji Fakültesi, Matematik Mühendisliği, Turkey 1994 - 1999

### Foreign Languages

English, B2 Upper Intermediate

### Certificates, Courses and Trainings

IT, Microsoft Certified Professional/MCP, Mayasoft, 2002

IT, Microsoft Certified Systems Engineer/MCSE, Mayasoft, 2002

IT, Microsoft Certified Database Administrator/MCDBA, Mayasoft, 2002

### Dissertations

Doctorate, Tanecikli Hesaplama Yöntemi ile Kavram Çözümleme, Yıldız Teknik Üniversitesi, Matematik Mühendisliği,  
Matematik Mühendisliği, 2008

Postgraduate, Uzaktan Eğitim Yöntem ve Uygulamaları, Yıldız Teknik Üniversitesi, Matematik Mühendisliği, Matematik  
Mühendisliği, 2001

### Research Areas

Computer Sciences, Artificial Intelligence, Computer Learning and Pattern Recognition, Uncertainty Management,  
Knowledge Engineering, Fuzzy Sets and Systems, Pattern Recognition and Image Processing, Neural Networks,  
Engineering and Technology

## Academic Titles / Tasks

Assistant Professor, Yildiz Technical University, Kimya Metalurji Fakültesi, Matematik Mühendisliği, 2018 - Continues  
Assistant Professor, National Defense University, Naval Academy, Bilgisayar Mühendisliği, 2018 - 2019  
Research Assistant PhD, Yildiz Technical University, Kimya Metalurji Fakültesi, Matematik Mühendisliği, 2008 - 2018  
Research Assistant, Yildiz Technical University, Kimya Metalurji Fakültesi, Matematik Mühendisliği, 1999 - 2008

## Academic and Administrative Experience

### Courses

Mathematical Foundations of Artificial Intelligence, Postgraduate, 2019 - 2020  
Fuzzy Logic, Undergraduate, 2019 - 2020  
Data Mining, Postgraduate, 2019 - 2020  
Matematik Mühendisliğinde Tasarım Uygulamaları, Undergraduate, 2018 - 2019, 2017 - 2018  
Bitirme Çalışması, Undergraduate, 2018 - 2019, 2017 - 2018  
Yazılım Mühendisliği, Undergraduate, 2018 - 2019  
Yapay Zeka, Undergraduate, 2018 - 2019  
Sayısal Yöntemler, Undergraduate, 2017 - 2018  
Kompleks Analiz, Undergraduate, 2017 - 2018  
Çizge Kuramı ve Algoritmalar, Undergraduate, 2017 - 2018  
Yapay Zeka, Undergraduate, 2017 - 2018  
Veri Tabanı Temelleri, Undergraduate, 2010 - 2011  
Yapay Zeka, Undergraduate, 2010 - 2011  
Ayrık Matematik, Undergraduate, 2008 - 2009  
Bilgisayar Programlama, Undergraduate, 2008 - 2009  
Kriptografi, Undergraduate, 2008 - 2009  
Veri Tabanı, Undergraduate, 2008 - 2009

### Supervised Theses

Bal M., Dönüştürücü tabanlı çekışmeli üretici ağlar ile yüz ifadelerindeki deęişimin analizi, Postgraduate, N.YAGUBBAYLI(Student), 2023  
Bal M., Derin öğrenme tabanlı seyahat öneri sistemi geliştirme, Postgraduate, A.ÖZ(Student), 2023  
Bal M., Meme kanserlerinde prognostik faktörleri öngörmeye tümörün dijital meme tomosentez görüntülerinin derin öğrenme ile analizi, Postgraduate, E.AYDINGÖZ(Student), 2023

### Jury Memberships

Post Graduate, Yüksek Lisans Tez Savunma Jürisi, Bahçeşehir Üniversitesi, January, 2019

### Designed Lessons

Bal M., Hesaplamalı Sürü Zekası, Postgraduate, 2022 - 2023  
Bal M., Graph Theory and Algorithms, Undergraduate, 2018 - 2019

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

- I. **An Overview of Path Planning Technologies for Unmanned Aerial Vehicles**  
Bal M.  
THERMAL SCIENCE, vol.26, pp.2865-2876, 2022 (SCI-Expanded)
- II. **Sarcoidosis: Changed Phenotype and Worsening of the Course by Overtime**  
Sipahi S., Başaranoğlu M., BAL M., Karayel T.  
EUROPEAN RESPIRATORY JOURNAL, vol.46, 2015 (SCI-Expanded)
- III. **Decision support system for collision avoidance of vessels**  
Simsir U., AMASYALI M. F., BAL M., ÇELEBİ U. B., Ertugrul S.  
APPLIED SOFT COMPUTING, vol.25, pp.369-378, 2014 (SCI-Expanded)
- IV. **Performance Evaluation of the Machine Learning Algorithms Used in Inference Mechanism of a Medical Decision Support System**  
BAL M., AMASYALI M. F., Sever H., Kose G., Demirhan A.  
SCIENTIFIC WORLD JOURNAL, 2014 (SCI-Expanded)
- V. **Comparison of different inference algorithms for medical decision making**  
Kose G., Sever H., BAL M., Üstündağ A.  
INTERNATIONAL JOURNAL OF COMPUTATIONAL INTELLIGENCE SYSTEMS, vol.7, pp.29-44, 2014 (SCI-Expanded)
- VI. **Predictions of oil/chemical tanker main design parameters using computational intelligence techniques**  
EKİNCİ S., ÇELEBİ U. B., BAL M., AMASYALI M. F., Boyacı U. K.  
APPLIED SOFT COMPUTING, vol.11, no.2, pp.2356-2366, 2011 (SCI-Expanded)
- VII. **Analysis of 87 patients with Lofgren's syndrome and the pattern of seasonality of subacute sarcoidosis**  
Demirkok S. S., Basaranoglu M., Dervis E., Bal M., Karayel T.  
RESPIROLOGY, vol.11, no.4, pp.456-461, 2006 (SCI-Expanded)
- VIII. **Overview of 118 patients with sarcoidosis: experience of 3 different Centers from Turkey**  
Demirkok S. S., BAŞARANOĞLU M., Kilinc G., Yurteri G., Sengul E., Ozisik C. N., BAL M.  
SARCOIDOSIS VASCULITIS AND DIFFUSE LUNG DISEASES, vol.23, no.2, pp.152, 2006 (SCI-Expanded)
- IX. **Decision-making in treatment of sarcoidosis**  
Sipahi S. S., Demirkok M., Kilinc G., Yurteri G., Sengul E., Ozisik N., BAL M.  
SARCOIDOSIS VASCULITIS AND DIFFUSE LUNG DISEASES, vol.23, no.2, pp.155, 2006 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Investigation of Turnover Tendency Predictions with Artificial Intelligence and Mathematical Models**  
Yapay Zekâ ve Matematiksel Modeller İle Yapılan İşten Ayrılma Eğilim Tahminlerinin İncelenmesi  
Aycan H. B., BAL M.  
Romaya Journal: Researches on Multidisciplinary Approaches, vol.2024-October, no.2, pp.232-240, 2024 (Scopus)
- II. **Kullanıcı ve Öğre Bazlı, Geniş ve Derin Öğrenme Tabanlı Seyahat Öneri Sistemi**  
Oz A., Uzun Per M., Bal M.  
Avrupa Bilim ve Teknoloji Dergisi, no.51, pp.334-351, 2023 (Peer-Reviewed Journal)
- III. **Tomosentez Görüntüleri ile Yapılan Derin Öğrenme Çalışmalarında Kullanılan Görüntü Ön İşleme Yöntemleri Üzerine Bir Literatür Araştırması**  
Aydingoz E., Bal M.  
Avrupa Bilim ve Teknoloji Dergisi, no.51, pp.352-367, 2023 (Peer-Reviewed Journal)
- IV. **A Novel Approach for the Recruitment Process in Human Resources Management: Decision Support System Based on Formal Concept Analysis**  
Bal M., Bal Y.  
International Journal of Decision Support System Technology , vol.14, pp.1-20, 2022 (Peer-Reviewed Journal)
- V. **A Novel Approach for the Recruitment Process in Human Resources Management**  
BAL M., BAL Y.

INTERNATIONAL JOURNAL OF DECISION SUPPORT SYSTEM TECHNOLOGY, vol.14, no.1, pp.1-20, 2022 (ESCI)

- VI. **Beyond Traditional: How Artificial Intelligence Transforms Human Resources Management**  
BAL Y., BAL M., DEMİRHAN A., ERTEMSİR E.  
Ulakbilge Sosyal Bilimler Dergisi, vol.10, no.70, pp.189-200, 2022 (Peer-Reviewed Journal)
- VII. **Proaktif insan kaynakları yönetiminin yeni gücü: İK analitiği ve yapay zekâ**  
BAL Y., BAL M.  
Business and Management Studies: An International Journal, vol.9, no.3, pp.1198-1216, 2021 (Peer-Reviewed Journal)
- VIII. **Kaba Küme Akış Çizgelerinin Olasılıksal Yapısı**  
Bal M.  
Avrupa Bilim ve Teknoloji Dergisi, no.23, pp.730-741, 2021 (Peer-Reviewed Journal)
- IX. **Analysis of Changes in Market Shares of Commercial Banks Operating in Turkey Using Computational Intelligence Algorithms**  
AMASYALI M. F., DEMİRHAN A., BAL M.  
Advances in Artificial Intelligence, vol.1, pp.1-14, 2014 (Peer-Reviewed Journal)
- X. **Rough Set Theory as Symbolic Data Mining Method: An Application on Complete Decision Table.**  
BAL M.  
Information Sciences Letters, vol.2, no.1, pp.35-47, 2013 (Scopus)
- XI. **Interestingness Measures for Association Rule Mining**  
BAL M., DEMİRHAN A.  
International Multidisciplinary Thought, vol.1, pp.258-270, 2011 (Peer-Reviewed Journal)
- XII. **A New Method for Employee Selection Process in Human Resource Management: A Soft Computing Approach**  
BAL Y., BAL M.  
International Journal of Arts and Sciences, vol.4, no.7, pp.9-19, 2011 (Peer-Reviewed Journal)
- XIII. **Creating Competitive Advantage by Using Data Mining Technique as an Innovative Method for Decision Making Process in Business.**  
BAL M., BAL Y., DEMİRHAN A.  
International Journal of Online Marketing, vol.1, no.3, pp.38-45, 2011 (ESCI)
- XIV. **Modeling the Symptom-Disease Relationship by Using Rough Set Theory and Formal Concept Analysis**  
BAL M., Sever H., Kalıpsız O.  
International Journal of Medical and Health Sciences, vol.1, pp.586-590, 2007 (Peer-Reviewed Journal)
- XV. **Sarkoidozda Gecikmiş Tanı: İstanbul' da Üç Farklı Merkezin Sonuçları**  
Sipahi S., Kılınç G., Çimen N., Yurteri G., Şengül E., Günay C., BAL M.  
EURASIAN JOURNAL OF PULMONOLOGY, vol.9, pp.18, 2007 (ESCI)
- XVI. **Comparison of Different Neural Networks Performances on Motorboat Datasets**  
Amasyalı M., BAL M., ÇELEBİ U. B., Boyacı U. K.  
LECTURE NOTES IN COMPUTER SCIENCE, no.4263, pp.212-220, 2006 (Scopus)

## **Books & Book Chapters**

### **I. Business Intelligence Solutions for Decision-Making in Global Organizations**

Bal Y., BAL M.

in: Cultural and Technological Influences on Global Business, "Christiansen B.", Editor, Iğrı Global Publications, Hershey, pp.29-45, 2013

### **II. Economic Potential of RFID Use in Apparel Retail Industry**

Üstündağ A., Üstündağ A., BAL M.

in: The Value of RFID: Benefits vs Costs, "Üstündağ A.", Editor, Springer, London/Berlin, London, pp.129-139, 2012

### III. Comparison of Different Neural Networks Performances On Motorboat Datasets

AMASYALI M. F., BAL M., ÇELEBİ U. B., EKİNCİ S., Boyacı U. K.

in: Lecture Notes in Computer Science, Levi, A., Editor, Springer-Verlag , New York, 2006

## Refereed Congress / Symposium Publications in Proceedings

- I. **Transformer Bazlı GAN ile Duygu Analizi**  
Yagubbayli N., Bal M.  
INSAC International Researches Congress on Natural and Engineering Sciences, Konya, Turkey, 18 - 19 March 2023, pp.194
- II. **İNSAN KAYNAKLARI YÖNETİMİNDE ETKİN BİR İŞE ALIM SÜRECİ İÇİN YAPAY ZEKÂ YÖNTEMLERİNİN KULLANIMI**  
Bal M., Bal Y., Bozkurt S.  
3RD INTERNATIONAL CONGRESS OF EURASIAN SOCIAL SCIENCES, Muğla, Turkey, 18 - 21 April 2019
- III. **An Application Using Decision Rules Algorithm in Employee Selection Process for HRM**  
BAL M., BAL Y.  
IJAS Conferences 2016, Prag, Czech Republic, 01 November 2016
- IV. **Knowledge Discovery in Databases Process with Bacchus' Probabilistic Logic Method**  
BAL M., DEMİRHAN A.  
IJAS Conferences 2016, Prag, Czech Republic, 01 November 2016
- V. **The Comparison of Rough Set Theory (RST) and Fuzzy Set Theory (FST) as Granular Computing Method.**  
BAL M., Köse G.  
International Congress on Fundamental and Applied Sciences 2016, İstanbul, Turkey, 22 August 2016, pp.92
- VI. **A Study on Determining the Spending Trend of Consumers By Using Clustering Analysis**  
BAL M., DEMİRHAN A.  
International Management Conference: Managing Sustainable Growth, Portoroz, Slovenia, 28 May 2015, pp.6
- VII. **Using Flow Graph in Data Mining**  
BAL M., Demirhan A.  
12th Academic Conference, Prag, Czech Republic, 15 September 2014
- VIII. **Using Rough Set Theory For Supply Chain Management Process in Business**  
BAL M., Demirhan A.  
11. Balkan Conference on Operational Research, Belgrad, Serbia And Montenegro, 07 September 2013, pp.16
- IX. **Determining the Relative Efficiencies of Manufacturing Companies in Istanbul Exchange by Using Data Envelopmant Analysis**  
Demirhan A., Bal M.  
11. Balkan Conference on Operational Research , Belgrade, Serbia, 07 September 2013, pp.5
- X. **The Impacts of Data Inaccuracy on Retailer\'s Perishable Inventory.**  
BAL M.  
24th European Modeling and Simulation Symposium (Simulation in Industry), EMSS 2012, Vienna, Austria., 01 September 2012
- XI. **Combining Different Inference Methods for Medical Decision Support Systems**  
Köse G., Sever H., BAL M., Üstündağ A.  
The 10th International FLINS Conference on Uncertainty Modeling in Knowledge Engineering and Decision Making, FLINS 2012, İstanbul, Turkey, 15 August 2012, pp.88-93
- XII. **An Overview of the Uncertain Reasoning Approaches for Data Mining.**  
BAL M.  
2 nd. World Conference on Information Technology, Antalya, Türkiye., 01 November 2011
- XIII. **A New Paradigm in Decision Making Process in Business: Using Soft Computing Methods.**  
BAL M.

2 nd. World Conference on Information Technology, Antalya, Türkiye., 01 November 2011

**XIV. Rule Induction from Decision Table Using Rough Set Theory**

BAL M.

The International Conference on Computer Science and Applied Computing , Vienna, Austria., 01 February 2011

**XV. Veri Madenciliğinde Kaba Küme Teorisi Kullanımı**

BAL M., Üstündağ A.

30. Ulusal Yöneylem Araştırması/Endüstri Mühendisliği Kongresi,, İstanbul, Turkey, 20 June 2010

**XVI. Belirti-Hastalık İlişkisinin Biçimsel Kavram Analizi ile Modellenmesi**

BAL M., Üstündağ A.

Yöneylem Araştırması ve Endüstri Mühendisliği 29. Ulusal Kongresi, Ankara, Turkey, 12 June 2009

**XVII. Dayanısız Tüketim Ürünlerinde Hatalı Stok Verilerinin Perakendeci Performansı Üzerindeki Etkileri**

Üstündağ A., BAL M.

29. Ulusal Yöneylem Araştırması/Endüstri Mühendisliği Kongresi, Ankara, Turkey, 10 June 2009

**XVIII. Using Machine Learning Methods in Computation of Engine Power of Motorboats and the Comparison of These Methods**

Bal M., Amasyalı M. F., Çelebi U. B., Ekinci S.

International Conference on Modeling and Simulation, Konya, Turkey, 28 - 30 August 2006, pp.223-227

**XIX. Comparison of different neural networks performances on motorboat datasets**

AMASYALI M. F., BAL M., ÇELEBİ U. B., EKİNCİ S., BOYACI U. K.

21st International Symposium on Computer and Information Sciences (ISCIS 2006), İstanbul, Turkey, 1 - 03 November 2006, vol.4263, pp.212-220

**XX. Veri Madenciliğinde Birliktelik Kuralları**

BAL M., Kalıpsız O.

1. Bilimde Modern Yöntemler Sempozyumu, Kocaeli, Turkey, 08 November 2005

**XXI. Comparison of Lossy Image Compression Methods**

Emirođlu İ., BAL M., Elibol A.

International Conference on Signal Processing ICSP 2003, Çanakkale, Turkey, 03 September 2003, pp.177-181

**XXII. Uzaktan Eğitim Yöntem ve Uygulamaları**

Emirođlu İ., BAL M.

Bilgi Teknolojileri Kongresi, Denizli, Turkey, 21 May 2003

**XXIII. An Internet Modal Automation System**

Emirođlu İ., BAL M., Elibol A., Olgun E.

ICIHE International Conference on Innovation in Higher Education Centre for Technology in Learning and Teaching, Kiev, Ukraine, 12 May 2003

## Supported Projects

BAL M., TUBITAK Project, SÜRÜCÜLER İÇİN AKTİF KORUMA SİSTEMİ: GÖRÜNTÜ TABANLI UYKULU/DİKKATSİZ SÜRÜCÜ TESPİTİ VE UZAKTAN SÜRÜCÜ ALKOL ORANI ÖLÇÜMÜ İÇİN ENTEGRE BİR SİSTEM, 2017 - Continues

Tayfur İ., Bal M., TUBITAK Project, Dron Entegre, Yapay Zeka Tabanlı Kitleles Kayıp Triyajı Karar Destek Sisteminin Geliştirilmesi, 2023 - 2026

BAL Y., ERTEMSİR E., BAL M., DEMİRHAN A., BAHŞI Ö. F., Project Supported by Higher Education Institutions, İNSAN KAYNAKLARI ANALİTİĞİNDE YAPAY ZEKA YÖNTEMLERİNİN KULLANIMI, 2021 - 2024

## Memberships / Tasks in Scientific Organizations

IEEE, Member, 2017 - Continues

International Society on Multiple Criteria Decision Making, Member, 2011 - Continues

The Association of European Operational Research Societies, Member, 2010 - Continues

International Rough Set Society-IRSS, Member, 2009 - Continues

## Scientific Refereeing

ACM Transactions on Autonomous and Adaptive Systems, SCI Journal, January 2019  
ACM Transactions on Data Science, Other Indexed Journal, June 2018  
Group Decision and Negotiation, Journal Indexed in SSCI, January 2018  
Pattern Recognition Letters, SCI Journal, December 2017  
Knowledge and Information Systems, SCI Journal, February 2014  
Human and Ecological Risk Assessment, SCI Journal, December 2013  
Turkish Journal of Electrical Engineering and Computer Sciences, SCI Journal, April 2013  
International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, SCI Journal, March 2013  
The Arabian Journal for Science and Engineering, SCI Journal, March 2013  
Applied Intelligence Research, Other Indexed Journal, May 2012  
Information Systems Frontiers, SCI Journal, October 2011  
Information Fusion, SCI Journal, September 2011  
Knowledge-Based Systems, SCI Journal, October 2010  
Information Sciences, SCI Journal, May 2010  
Expert Systems, SCI Journal, May 2009  
European Journal of Operational Research, SCI Journal, March 2009  
Applied Intelligence, SCI Journal, May 2008  
Applied Soft Computing, SCI Journal, April 2008  
Web Intelligence and Multi-Agent Systems: An International Journal , Other Indexed Journal, March 2008

## Metrics

Publication: 52  
Citation (WoS): 113  
Citation (Scopus): 148  
H-Index (WoS): 5  
H-Index (Scopus): 5

## Congress and Symposium Activities

IJAS Conference 2016, Attendee, Praha, Czech Republic, 2016  
International Management Conference: Managing Sustainable Growth, Attendee, Izola, Slovenia, 2015  
6. Deniz Sistemleri Semineri, Attendee, Ankara, Turkey, 2013  
11th Balkan Conference on Operational Research, Attendee, Beograd, Serbia And Montenegro, 2013  
International Symposium Chaos, Complexity and Leadership, Attendee, Ankara, Turkey, 2012  
24 th European Modeling and Simulation Symposium, Attendee, Wien, Austria, 2012  
International Conference on Computer Science and Applied Computing, Attendee, Wien, Austria, 2011  
IJAS Conference 2010, Attendee, Roma, Italy, 2010  
International Conference on Data Engineering, Attendee, İstanbul, Turkey, 2007  
International Symposium on Computer and Information Sciences, Attendee, İstanbul, Turkey, 2006  
International Conference on Signal Processing, Attendee, Çanakkale, Turkey, 2003

## Entrepreneurship Activities

Anonymous, Sargetek Yazılım ve Yapay Zeka Teknolojileri A.Ş., 30 May 2013, Co-Founder

## **Non Academic Experience**

SARGETEK YAZILIM VE YAPAY ZEKA TEKNOLOJİLERİ A.Ş.  
MİLLİ SAVUNMA ÜNİVERSİTESİ DENİZ HARP OKULU KOMUTANLIĞI  
DENİZ KUVVETLERİ KOMUTANLIĞI DENİZ HARP OKULU