

## Assoc. Prof. AYŞE DEMİRHAN

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: L-3584-2018

ScopusID: 24777850300

Yoksis Researcher ID: 107546

### Education Information

Post Doctorate, University of Southern California, Mark and Mary Stevens Neuroimaging and Informatics Institute, Imaging Genetics Center, United States Of America 2014 - 2015

Doctorate, Gazi University, Bilişim Enstitüsü, Elektronik Ve Bilgisayar Eğitimi Anabilim Dalı (Disiplinlerarası), Turkey 2006 - 2012

Postgraduate, Gazi University, Fen Bilimleri Enstitüsü, Elektronik Bilgisayar Eğitimi (YI) (Tezli), Turkey 2002 - 2006

Undergraduate, Gazi University, Teknik Eğitim Fakültesi, Elektronik Ve Bilgisayar Eğitimi Bölümü, Turkey 1998 - 2002

### Dissertations

Doctorate, Beyin MR görüntülerinin dalgacık dönüşümü ve özörgütlemeli harita ağları kullanılarak bölütlenmesi, Gazi University, Bilişim Enstitüsü, Elektronik Ve Bilgisayar Eğitimi Anabilim Dalı (Disiplinlerarası), 2012

Postgraduate, Sanal şehir parametrelerinin otomatik belirlenmesi için bir sistem geliştirilmesi, Gazi University, Fen Bilimleri Enstitüsü, Elektronik Bilgisayar Eğitimi (YI) (Tezli), 2006

### Research Areas

Artificial Intelligence, Computer Learning and Pattern Recognition, Pattern Recognition and Image Processing, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Gazi University, Teknoloji Fakültesi, Elektrik - Elektronik Mühendisliği, 2022 - Continues

Assistant Professor, Gazi University, Teknoloji Fakültesi, Elektrik - Elektronik Mühendisliği, 2018 - 2022

Research Assistant, Gazi University, Teknoloji Fakültesi, Elektrik - Elektronik Mühendisliği, 2017 - 2018

Research Assistant, Gazi University, Teknik Eğitim Fakültesi, Elektronik ve Bilgisayar Eğitimi, 2002 - 2017

## Courses

SAYISAL TASARIM LAB, Undergraduate, 2021 - 2022  
YÜKSEK LİSANS TEZ ÇALIŞMASI, Postgraduate, 2021 - 2022  
MEZUNİYET PROJESİ, Undergraduate, 2021 - 2022  
SAYISAL TASARIM, Undergraduate, 2021 - 2022  
GÖRÜNTÜ İŞLEME TEKNİKLERİ, Postgraduate, 2021 - 2022  
YÜKSEK LİSANS TEZİNE HAZIRLIK, Postgraduate, 2021 - 2022  
MİKROİŞLEMCİLER, Undergraduate, 2017 - 2018  
İŞ YERİ EĞİTİMİ, Undergraduate, 2017 - 2018  
SAYISAL TASARIM, Undergraduate, 2017 - 2018  
MESLEKİ YAZILIM UYGULAMALARI, Undergraduate, 2017 - 2018  
MİKROİŞLEMCİLER LAB., Undergraduate, 2017 - 2018  
MÜHENDİSLİK TASARIMI, Undergraduate, 2017 - 2018

## Advising Theses

Demirhan A., Automatic stroke detection in brain images with deep learning method, Postgraduate, B.UYGUN(Student), 2023  
Demirhan A., ÇOCUKLARA GERİ DÖNÜŞÜM BİLİNCİ KAZANDIRMAK İÇİN GÖMÜLÜ DERİN ÖĞRENMEYE SAHİP BİR ATIK KUTUSU TASARLAMAK, Postgraduate, O.KARA(Student), 2023  
Demirhan A., DEVELOPMENT OF AN ARTIFICIAL INTELLIGENCE BASED DEPTH ESTIMATING AUTONOMOUS VEHICLE FOR INDOOR ENVIRONMENTS, Postgraduate, U.ULUSOY(Student), 2022  
Demirhan A., ACTION ANALYSIS WITH DEEP LEARNING FOR EDITING AND SUMMARIZING VIDEOS, Postgraduate, A.SAMET(Student), 2022

## Jury Memberships

Post Graduate, Post Graduate, Ankara Yıldırım Beyazıt Üniversitesi, September, 2024  
Post Graduate, Post Graduate, Ankara Yıldırım Beyazıt Üniversitesi, August, 2024  
Post Graduate, Post Graduate, Ankara Yıldırım Beyazıt Üniversitesi, August, 2024  
Appointment to Academic Staff-Assistant Professorship, Appointment to Academic Staff-Assistant Professorship, Şırnak Üniversitesi, January, 2023

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

- I. **Development of an obstacle avoiding autonomous vehicle by using stereo depth estimation and artificial intelligence based semantic segmentation**  
Ulusoy U., Eren O., Demirhan A.  
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.126, 2023 (SCI-Expanded)
- II. **Comparison of the Effectiveness of Deep Learning Methods for Face Mask Detection**  
Gedik O., Demirhan A.  
TRAITEMENT DU SIGNAL, vol.38, no.4, pp.947-953, 2021 (SCI-Expanded)
- III. **The effect of feature selection on multivariate pattern analysis of structural brain MR images**  
DEMİRHAN A.  
PHYSICA MEDICA-EUROPEAN JOURNAL OF MEDICAL PHYSICS, vol.47, pp.103-111, 2018 (SCI-Expanded)
- IV. **Neuroimage-based clinical prediction using machine learning tools**  
DEMİRHAN A.

INTERNATIONAL JOURNAL OF IMAGING SYSTEMS AND TECHNOLOGY, vol.27, no.1, pp.89-97, 2017 (SCI-Expanded)

- V. **Segmentation of Tumor and Edema Along With Healthy Tissues of Brain Using Wavelets and Neural Networks**  
DEMİRHAN A., Toru M., GÜLER İ.  
IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, vol.19, no.4, pp.1451-1458, 2015 (SCI-Expanded)
- VI. **Combining stationary wavelet transform and self-organizing maps for brain MR image segmentation**  
DEMİRHAN A., Gueler İ.  
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.24, no.2, pp.358-367, 2011 (SCI-Expanded)
- VII. **A survey on application of quantitative methods on analysis of brain parameters changing with temperature**  
DEMİRHAN A., Kaymaz M., AHISKA R., GÜLER İ.  
Journal of Medical Systems, vol.34, no.6, pp.1059-1071, 2010 (SCI-Expanded)
- VIII. **IMAGE SEGMENTATION USING SELF-ORGANIZING MAPS AND GRAY LEVEL CO-OCCURRENCE MATRICES**  
DEMİRHAN A., GÜLER İ.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.25, no.2, pp.285-291, 2010 (SCI-Expanded)
- IX. **Interpretation of MR images using self-organizing maps and knowledge-based expert systems**  
Gueler İ., DEMİRHAN A., KARAKIŞ R.  
DIGITAL SIGNAL PROCESSING, vol.19, no.4, pp.668-677, 2009 (SCI-Expanded)
- X. **MR images restoration with the use of fuzzy filter having adaptive membership parameters**  
Guler İ., Toprak A., Demirhan A., Karakiş R.  
JOURNAL OF MEDICAL SYSTEMS, vol.32, no.3, pp.229-234, 2008 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Cross-Assist: Road Assistance Application for Visually Impaired People**  
Alkan D., Demirhan A.  
Türk Bilim ve Mühendislik Dergisi, vol.6, no.2, pp.72-81, 2024 (Peer-Reviewed Journal)
- II. **Multi-person real-time pose tracking using kalman filter and global nearest neighbor method**  
Halici A. S., Demirhan A.  
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGISI, vol.26, no.2, pp.889-899, 2023 (ESCI)
- III. **Determining empty parking spaces and giving directions to the user with mobile application**  
Altay A. B., Demirhan A.  
Gazi Üniversitesi Fen Bilimleri Dergisi Part C: Tasarım ve Teknoloji, vol.11, no.1, pp.68-80, 2023 (Peer-Reviewed Journal)
- IV. **Farklı Çiçek Türlerini Derin Öğrenme Yöntemi İle Tanıma**  
Coşkun U. A., Demirhan A.  
Dokuz Eylül Üniversitesi Mühendislik Fakültesi Fen ve Mühendislik Dergisi, vol.24, no.70, pp.55-64, 2022 (Peer-Reviewed Journal)
- V. **GÖRÜNTÜ İŞLEME TEKNİKLERİ VE ROBOT KOL İLE NESNELERİ KATEGORİLERİNE AYIRMA**  
Sarıyıldız S. Ö., Demirhan A.  
Uludağ Üniversitesi Mühendislik Fakültesi Dergisi, vol.26, no.2, pp.547-556, 2021 (Peer-Reviewed Journal)
- VI. **Kolektif Öğrenmeye Dayalı Çok Değişkenli Desen Analizinin Klinik Karar Destek Sistemlerinde Uygulanması**  
Demirhan A.  
Düzce Üniversitesi Bilim ve Teknoloji Dergisi, vol.6, no.4, pp.953-961, 2018 (Peer-Reviewed Journal)
- VII. **Performance of Machine Learning Methods In Determining The Autism Spectrum Disorder Cases**  
Demirhan A.

Mugla Journal of Science and Technology, vol.4, no.1, pp.79-84, 2018 (Peer-Reviewed Journal)

VIII. **Classification of Structural MRI for Detecting Alzheimer's Disease**

DEMİRHAN A.

International Journal of Intelligent Systems and Applications in Engineering, vol.4, no.1, pp.195-198, 2016 (Peer-Reviewed Journal)

IX. **Bilişim ve Sağlık**

DEMİRHAN A., GÜLER İ.

Bilişim Teknolojileri Dergisi, vol.4, no.3, pp.13-20, 2011 (Peer-Reviewed Journal)

X. **Tıpta Yapay Zeka Uygulamaları**

DEMİRHAN A., KILIÇ Y. A., GÜLER İ.

Yoğun Bakım Dergisi, vol.9, no.1, pp.31-41, 2010 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Detection of Ischemic, Hemoragic and Stroke in The Brain with Deep Learning Method on CT Images**  
Karabulut Uygun B., Demirhan A.  
9th International Başkent Congress On Physical, Engineering, And Applied Sciences, 20 - 23 May 2023, pp.269-281
- II. **Classification of Recyclable Wastes Using Deep Learning Models**  
Kara O., Demirhan A.  
13th International İstanbul Scientific Research Congress On Life, Engineering, And Applied Sciences, 29 - 30 April 2023, pp.171-176
- III. **POZ TAHMİNİ YÖNTEMLERİNİN GERÇEK ZAMANLI POZ TAKİBİNDEKİ İŞLEM SÜRESİNE ETKİSİ**  
Halıcı A. S., Demirhan A.  
5. ULUSLARARASI AVRUPA DİSİPLİNLERARASI ARAŞTIRMALAR KONGRESİ, 28 January 2022, vol.2, pp.287-294
- IV. **Stereo Kamera ve Yapay Zeka Tabanlı Derinlik Algılama Sistemi İle İnsan Mesafe Tespiti**  
Ulusoy U., Demirhan A.  
12. Uluslararası Bilimsel Araştırmalar Kongresi, 17 - 18 December 2021, pp.40-47
- V. **Pattern Analysis for the Neuroimaging Based Diagnosis of Schizophrenia**  
DEMİRHAN A.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- VI. **Random Forests Based Recognition of the Clinical Labels Using Brain MRI Scans**  
DEMİRHAN A.  
3rd International Conference on Frontiers of Signal Processing (ICFSP), Paris, France, 6 - 08 September 2017, pp.156-159
- VII. **Classification of Structural MRI for Detecting Alzheimer s Disease**  
DEMİRHAN A.  
3rd International Conference on Advanced Technology Sciences (ICAT 16), Konya, Turkey, 1 - 03 September 2016, pp.1376-1379
- VIII. **FEATURE SELECTION IMPROVES THE ACCURACY OF CLASSIFYING ALZHEIMER DISEASE USING DIFFUSION TENSOR IMAGES**  
DEMİRHAN A., Nir T. M., Zavaliangos-Petropulu A., Jack C. R., Weiner M. W., Bernstein M. A., Thompson P. M., Jahanshad N.  
IEEE 12th International Symposium on Biomedical Imaging, New York, United States Of America, 16 - 19 April 2015, pp.126-130
- IX. **AUTOMATIC SEGMENTATION OF TUMOR, EDEMA AND HEALTHY TISSUES OF BRAIN USING NEURO FUZZY INFERENCE SYSTEM**  
DEMİRHAN A., GÜLER İ.  
22nd IEEE Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, 23 - 25 April 2014, pp.120-123
- X. **Beyin MR Görüntülerinin Analizi için Dalgacık Dönüşümü ve Sinir Ağlarının Kullanılması**

DEMİRHAN A., GÜLER İ.

18. Sinyal İşleme ve İletişim Uygulamaları Kurultayı (SIU 10), Diyarbakir, Turkey, Turkey, 22 - 24 April 2010, pp.933-936

## Supported Projects

Demirhan A., Kaya F., TUBITAK Project, 3B Tarayıcı, 2023 - 2024

Demirhan A., Karabulut M. B., TUBITAK Project, CNN ve LSTM Modellerinin Birlesimi ile Isaret Dili Tercümanı, 2023 - 2024

Demirhan A., Çeken E., TUBITAK Project, Konvolüsyonel Sinir Agları Kullanılarak Trafik Isareti Tanıma Sistemi, 2023 - 2024

Demirhan A., Güngör Ö. S., TUBITAK Project, Endüstriyel Otomasyonda Görüntü İşleme Ve Yapay Zeka Teknikleri İle Ürünlerde Hata Denetimi, 2022 - 2024

Demirhan A., Aktaş B. N., TUBITAK Project, UV-C ile Dezenfeksiyon, 2022 - 2024

Demirhan A., Bostan A. M., TUBITAK Project, İnsan aktivitesi tanıyarak spor hareketlerinin doğruluğunu inceleme, 2021 - 2022

DEMİRHAN A., Halıcı A. S., Project Supported by Higher Education Institutions, Çok sayıda kamera ile kaydedilen videoların kurgusu ve özetlenmesi için derin öğrenme ile hareket analizi ve zaman senkronizasyonu, 2021 - 2022

Güler İ., Demirhan A., Project Supported by Higher Education Institutions, MR Görüntülerinin Bilgi Tabanlı Yapay Zekâ Teknikleri Kullanılarak Yorumlanması, 2007 - 2008

Güler İ., EU Supported Other Project, Yazılım Geliştirmede Endüstriyel Uygulamalar, 2005 - 2005

## Patent

Demirhan A., Halıcı A. S., MÜZİK RİTMİNE VE HAREKET TANIMA ALGORİTMASINA DAYALI VİDEO DÜZENLEME YÖNTEMİ, Patent, CHAPTER G Physics, The Invention Registration Number: 2022 019819 , Standard Registration, 2024

## Scientific Refereeing

TUBITAK Project, 1507 - TÜBİTAK SME R&D Start Support Program, Gazi University, Turkey, November 2024

TUBITAK Project, 1507 - TÜBİTAK SME R&D Start Support Program, Gazi University, Turkey, November 2024

TUBITAK Project, 1501 - Industry R & D Projects Support Program, Gazi University, Turkey, August 2024

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, SCI Journal, July 2024

TUBITAK Project, 1501 - Industry R & D Projects Support Program, Gazi University, Turkey, June 2024

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, SCI Journal, May 2024

TUBITAK Project, 1501 - Industry R & D Projects Support Program, Gazi University, Turkey, May 2024

Project Supported by Higher Education Institutions, BAP Other, Gazi University, Turkey, May 2024

TUBITAK Project, 1507 - TÜBİTAK SME R&D Start Support Program, Gazi University, Turkey, May 2024

IEEE SIGNAL PROCESSING LETTERS, National Scientific Refreed Journal, March 2024

Afyon Kocatepe Üniversitesi Fen ve Mühendislik Bilimleri Dergisi, National Scientific Refreed Journal, February 2024

IEEE SIGNAL PROCESSING LETTERS, Journal Indexed in SCI-E, February 2024

TUBITAK Project, 2209-A - Üniversite Öğrencileri Araştırma Projeleri Destekleme Programı, Gazi University, Turkey, February 2024

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, January 2024

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, December 2023

Project Supported by Higher Education Institutions, BAP Other, Gazi University, Turkey, December 2023

JOURNAL OF POLYTECHNIC-POLİTEKNİK DERGISİ, Journal Indexed in ESCI, August 2023

TUBITAK Project, 1005 - National New Ideas and Products Research Support Program, TÜBİTAK, Turkey, July 2023

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, March 2023  
GAZI UNIVERSITY JOURNAL OF SCIENCE, National Scientific Refreed Journal, January 2023  
IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, Journal Indexed in SCI-E, January 2023  
TUBITAK Project, 1501 - Industry R & D Projects Support Program, TÜBİTAK, Turkey, January 2023  
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, SCI Journal, December 2022  
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGİSİ, Journal Indexed in ESCI, December 2022  
TUBITAK Project, 1501 - Industry R & D Projects Support Program, TÜBİTAK, Turkey, December 2022  
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, June 2022  
INTERNATIONAL JOURNAL OF IMAGING SYSTEMS AND TECHNOLOGY, Journal Indexed in SCI-E, April 2022  
COMPUTERS IN BIOLOGY AND MEDICINE, Journal Indexed in SCI-E, April 2022  
Politeknik Dergisi, Journal Indexed in ESCI, March 2022  
Gazi Mühendislik Bilimleri Dergisi, National Scientific Refreed Journal, February 2022  
Gazi Üniversitesi Fen Bilimleri Dergisi Part C: Tasarım ve Teknoloji, Other Indexed Journal, January 2022  
Politeknik Dergisi, Journal Indexed in ESCI, January 2022  
GAZI UNIVERSITY JOURNAL OF SCIENCE, Journal Indexed in ESCI, November 2021  
TUBITAK Project, 1507 - TÜBİTAK SME R&D Start Support Program, TÜBİTAK, Turkey, November 2021  
Project Supported by Higher Education Institutions, BAP PhD, Gazi University, Turkey, June 2021  
Acta Infologica, National Scientific Refreed Journal, April 2021  
Engineering Applications Of Artificial Intelligence, Journal Indexed in SCI-E, September 2020  
Politeknik Dergisi, Journal Indexed in ESCI, July 2020  
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, October 2019  
International Journal Of Imaging Systems And Technology, Journal Indexed in SCI-E, August 2019  
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, June 2019  
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, February 2019  
Engineering Applications Of Artificial Intelligence, Journal Indexed in SCI-E, June 2018

## **Metrics**

Publication: 30  
Citation (WoS): 287  
Citation (Scopus): 445  
H-Index (WoS): 7  
H-Index (Scopus): 9

## **Scholarships**

2219 - Yurt Dışı Doktora Sonrası Araştırma Bursu, TUBITAK, 2014 - 2015