

Assoc. Prof. FATMA PATLAR AKBULUT

Personal Information

Email: f.patlar@iku.edu.tr

Web: <https://avesis.iku.edu.tr/f.patlar>

International Researcher IDs

ScholarID: fsp1J9gAAAAJ

ORCID: 0000-0002-9689-7486

Publons / Web Of Science ResearcherID: O-5520-2018

ScopusID: 48761909700

Yoksis Researcher ID: 299243

Biography

She received the B.S. and M.S. degree in Computer Engineering from Istanbul Kültür University, and Ph.D. degrees in Biomedical Engineering from Istanbul University in 2017. Her doctoral work focused on developing machine learning enabled wearable systems for long-term cardiovascular disease monitoring. She is an Assistant Professor in the Software Engineering Department of Istanbul Kültür University (IKU). Prior to IKU, Dr. Patlar Akbulut worked as a Post-Doctoral Researcher at the Computer Science Department and Advanced Self-Powered Systems of Integrated Sensors and Technologies (ASSIST) Center of North Carolina State University (NCSU) between 2017 and 2019. Her research interests include biomedical signal processing, affective computing, data analytics, and wearable systems for healthcare.

Education Information

Post Doctorate, North Carolina State University, College of Engineering, Electrical and Computer Engineering , United States Of America 2017 - 2019

Post Doctorate, North Carolina State University, College of Engineering, Computer Science, United States Of America 2017 - 2019

Doctorate, Istanbul University, Fen Bilimleri Enstitüsü, Biyomedikal Mühendisliği (Dr), Turkey 2012 - 2017

Postgraduate, Istanbul Kultur University, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği (YI) (Tezli), Turkey 2006 - 2009

Undergraduate, Istanbul Kultur University, Mühendislik-Mimarlık Fakültesi, Bilgisayar Mühendisliği Pr. (İngilizce), Turkey 2000 - 2005

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Akıllı giyilebilir kardiyo gözlem sistemi tasarımı, Istanbul University, Fen Bilimleri Enstitüsü, Biyomedikal Mühendisliği (Dr), 2017

Postgraduate, A continuous speech recognition system for Turkish language based on triphone model, Istanbul Kultur University, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği (YI) (Tezli), 2009

Academic Titles / Tasks

Associate Professor, Istanbul Kultur University, Mühendislik Fakültesi, Yazılım Mühendisliği, 2023 - Continues
Assistant Professor, Istanbul Kultur University, Mühendislik Fakültesi, Yazılım Mühendisliği, 2022 - 2023
Assistant Professor, Istanbul Kultur University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2019 - 2022
Research Assistant, Istanbul Kultur University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2010 - 2017

Academic and Administrative Experience

Fakülte Kurulu Üyesi, Istanbul Kultur University, Mühendislik Fakültesi, Yazılım Mühendisliği, 2022 - Continues
Head of Department, Istanbul Kultur University, Mühendislik Fakültesi, Yazılım Mühendisliği, 2022 - Continues
Erasmus Program Department Coordinator, Istanbul Kultur University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2019 - Continues

Courses

Applied Deep Learning, Undergraduate, 2023 - 2024, 2022 - 2023
CSE8090 Graduate Project, Undergraduate, 2023 - 2024
Hesaplamalı Düşünme ve Veri Bilimi, Postgraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021
Introduction to Data Science, Undergraduate, 2023 - 2024, 2022 - 2023
Object Oriented Programming, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021
Yapay Zeka, Postgraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021
Big Data Analytics, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020
Signals and Systems for Computer Engineers, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020
CSE8090 Graduate Project, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
CSE0440 Artificial Intelligence, Undergraduate, 2021 - 2022, 2020 - 2021

Advising Theses

Patlar Akbulut F., EEG ve Yüz İfadelerine Dayalı Çok Modlu Duygu Tanıma, Postgraduate, S.ERDEM(Student), 2024
FATMA P. A., Zihinsel yorgunluk bulgularının fizyolojik sinyallere dayalı analizi, Postgraduate, Ş.DERDİYOK(Student), 2023
FATMA P. A., Özellik önemine göre otomatik tanımlama sistemi verilerindeki eksik kalıpları yükleme, Postgraduate, E.NİLAY(Student), 2023
FATMA P. A., Açıklanabilir ve yorumlanabilir yüz duygu tanıma, Postgraduate, E.NASIR(Student), 2023
FATMA P. A., Modlar arası transfer öğrenimi ile ses sinyallerinden duygu tanıma, Postgraduate, F.RAŞİT(Student), 2023
FATMA P. A., Stres göstergelerinin ses özelliklerine dayalı olarak analizi, Postgraduate, Ç.KASAPOĞLU(Student), 2023
FATMA P. A., Müşteri ilişkileri yönetimi için manifold öğrenme ile denetimli doğrusal olmayan boyut indirgeme, Postgraduate, B.YILMAZ(Student), 2023
FATMA P. A., Çekişmeli üretici ağlar ile yüz ifadelerinden duygu etiketleme, Postgraduate, G.ÖZGÜL(Student), 2022
FATMA P. A., Duygusal reaksiyonların fizyolojik deneyim örnekleme ile analizi, Postgraduate, G.DOĞAN(Student), 2022
FATMA P. A., Derin duygu analizi ile uzaktan eğitimde kullanıcı deneyimini değerlendirme, Postgraduate, R.SADIGOV(Student), 2022
FATMA P. A., Gerçek zamanlı kaçak elektrik kullanımının derin öğrenme ile tespit edilmesi, Postgraduate, B.BEREKET(Student), 2022

Designed Lessons

Patlar Akbulut F., Introduction to Data Science, Undergraduate, 2022 - 2023

Patlar Akbulut F., Applied Deep Learning, Undergraduate, 2022 - 2023

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Deep learning-based user experience evaluation in distance learning**
Sadigov R., YILDIRIM E., KOCAÇINAR B., PATLAR AKBULUT F., ÇATAL Ç.
CLUSTER COMPUTING-THE JOURNAL OF NETWORKS SOFTWARE TOOLS AND APPLICATIONS, vol.27, no.1, pp.443-455, 2024 (SCI-Expanded)
- II. **Multi-modal fusion learning through biosignal, audio, and visual content for detection of mental stress**
Dogan G., Patlar Akbulut F.
NEURAL COMPUTING & APPLICATIONS, vol.35, pp.24435-24454, 2023 (SCI-Expanded)
- III. **Analysis of facial emotion expression in eating occasions using deep learning**
YILDIRIM E., Akbulut F., ÇATAL Ç.
Multimedia Tools and Applications, vol.82, no.20, pp.31659-31671, 2023 (SCI-Expanded)
- IV. **Biosignal based emotion-oriented video summarization**
DERDİYOK Ş., PATLAR AKBULUT F.
MULTIMEDIA SYSTEMS, vol.29, no.3, pp.1513-1526, 2023 (SCI-Expanded)
- V. **Wallet-Based Transaction Fraud Prevention Through LightGBM With the Focus on Minimizing False Alarms**
Iscan C., Kumas O., Patlar Akbulut F., Akbulut A.
IEEE ACCESS, vol.11, pp.131465-131474, 2023 (SCI-Expanded)
- VI. **Stress Detection Using Experience Sampling: A Systematic Mapping Study**
Dogan G., PATLAR AKBULUT F., ÇATAL Ç., Mishra A.
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH, vol.19, no.9, 2022 (SCI-Expanded)
- VII. **Hybrid deep convolutional model-based emotion recognition using multiple physiological signals**
PATLAR AKBULUT F.
COMPUTER METHODS IN BIOMECHANICS AND BIOMEDICAL ENGINEERING, vol.25, no.15, pp.1678-1690, 2022 (SCI-Expanded)
- VIII. **A Real-Time CNN-Based Lightweight Mobile Masked Face Recognition System**
KOCAÇINAR B., Tas B., Akbulut F., ÇATAL Ç., Mishra D.
IEEE Access, vol.10, pp.63496-63507, 2022 (SCI-Expanded)
- IX. **Restoring Fluorescence Microscopy Images by Transfer Learning From Tailored Data**
Demircan-Tureyen E., PATLAR AKBULUT F., Kamaşak M. E.
IEEE ACCESS, vol.10, pp.61016-61033, 2022 (SCI-Expanded)
- X. **Bimodal affect recognition based on autoregressive hidden Markov models from physiological signals**
Patlar Akbulut F., Perros H. G., Shahzad M.
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol.195, 2020 (SCI-Expanded)
- XI. **A Pipeline for Adaptive Filtering and Transformation of Noisy Left-Arm ECG to Its Surrogate Chest Signal**
Mohaddes F., da Silva R. L., PATLAR AKBULUT F., Zhou Y., Tanneeru A., Lobaton E., Lee B., Misra V.
ELECTRONICS, vol.9, no.5, 2020 (SCI-Expanded)
- XII. **Wearable sensor-based evaluation of psychosocial stress in patients with metabolic syndrome**
PATLAR AKBULUT F., İKİTİMUR B., AKAN A.
ARTIFICIAL INTELLIGENCE IN MEDICINE, vol.104, 2020 (SCI-Expanded)
- XIII. **A smart wearable system for short-term cardiovascular risk assessment with emotional dynamics**
PATLAR AKBULUT F., Akan A.

MEASUREMENT, vol.128, pp.237-246, 2018 (SCI-Expanded)

- XIV. **A cloud-based recommendation service using principle component analysis-scale-invariant feature transform algorithm**
AKBULUT A., ÇATAL Ç., PATLAR AKBULUT F.
NEURAL COMPUTING & APPLICATIONS, vol.28, no.10, pp.2859-2868, 2017 (SCI-Expanded)
- XV. **A decision support system to determine optimal ventilator settings**
PATLAR AKBULUT F., Akkur E., Akan A., Yarman B. S.
BMC MEDICAL INFORMATICS AND DECISION MAKING, vol.14, 2014 (SCI-Expanded)

Articles Published in Other Journals

- I. **Mobile health-enhanced assessment of 6-minute walk test for prognostic insights in metabolic syndrome**
Ochieng B., PATLAR AKBULUT F., Catal C.
DISCOVER APPLIED SCIENCES, vol.6, no.12, 2024 (ESCI)
- II. **Biosignals, facial expressions, and speech as measures of workplace stress: Workstress3d dataset**
Dogan G., Patlar Akbulut F., Çatal Ç.
DATA IN BRIEF, vol.54, 2024 (ESCI)
- III. **NeuroBioSense: A multidimensional dataset for neuromarketing analysis**
Kocaçınar B., Patlar Akbulut F., Çatal Ç.
DATA IN BRIEF, vol.53, 2024 (ESCI)
- IV. **Neurophysiological and biosignal data for investigating occupational mental fatigue: MEFAR dataset**
Derdiyok Ş., Patlar Akbulut F., Çatal Ç.
DATA IN BRIEF, 2024 (ESCI)
- V. **Investigating the effects of stress on achievement: BIOSTRESS dataset**
Çöpürkaya Ç., Meriç E., Erik E. B., Kocaçınar B., Patlar Akbulut F., Çatal Ç.
DATA IN BRIEF, vol.49, pp.109297, 2023 (ESCI)
- VI. **EVALUATING THE EFFECTS OF THE AUTONOMIC NERVOUS SYSTEM AND SYMPATHETIC ACTIVITY ON EMOTIONAL STATES**
Patlar Akbulut F.
İstanbul Ticaret Üniversitesi Fen Bilimleri Dergisi, vol.21, no.41, pp.156-169, 2022 (Peer-Reviewed Journal)
- VII. **Wearable sensor device for posture monitoring and analysis during daily activities: A preliminary study**
Patlar Akbulut F., özgül g.
International Advanced Researches and Engineering Journal, vol.6, no.1, pp.43-48, 2022 (Peer-Reviewed Journal)
- VIII. **Desing and Implementation of an Automatic Code Generation Tool for End-User Development**
Akbulut A., Patlar Akbulut F., KÖSEOKUR H., ÇATAL Ç.
Dokuz Eylül Üniversitesi Mühendislik Fakültesi Fen ve Mühendislik Dergisi, vol.19, no.55.1., pp.76-88, 2017 (Peer-Reviewed Journal)
- IX. **Support Vector Machines Combined with Feature Selection for Diabetes Diagnosis**
PATLAR AKBULUT F., AKAN A.
Journal of Electrical Electronics Engineering, vol.17, no.1, pp.3257-3265, 2017 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Analysis of the Lingering Effects of Covid-19 on Distance Education**
Kocaçınar B., Qarizada N., Dikkaya C., Azgun ., Yildirim E., Patlar Akbulut F.
in: Artificial Intelligence Applications and Innovations, Ilias Maglogiannis, Lazaros Iliadis, John MacIntyre, Manuel Dominguez, Editor, Springer, London/Berlin , Leon, pp.189-200, 2023

- II. **Sentiment Analysis of Tweets on Online Education during COVID-19**
Yildirim E., Yazgan H., Özbek O., Günay A. C., Kocaçınar B., Şengel Ö., Patlar Akbulut F.
in: Artificial Intelligence Applications and Innovations , Ilias Maglogiannis, Lazaros Iliadis, John MacIntyre, Manuel Dominguez, Editor, Springer, London/Berlin , Leon, pp.240-251, 2023
- III. **Communications in Computer and Information Science**
Özgül G., DERDİYOK Ş., PATLAR AKBULUT F.
in: Turkish Sign Language Recognition Using a Fine-Tuned Pretrained Model , Editor, Springer, pp.73-82, 2023

Refereed Congress / Symposium Publications in Proceedings

- I. **Fraud Detection using Recurrent Neural Networks for Digital Wallet Security**
İşcan C., PATLAR AKBULUT F.
International Conference on Computer Science and Engineering (UBMK), Turkey, 13 - 15 September 2023
- II. **A Comparative Analysis of Fraud Detection from Diverse Datasets to Algorithmic Performance**
İşcan C., Nardemir M. A., PATLAR AKBULUT F.
International Conference on Computer Science and Engineering (UBMK), Turkey, 13 September 2023
- III. **Deep sentiment analysis with data augmentation in distance education during the pandemic**
Sosun S. D., Tayfun B., Nukan Y., Altun I., Erik E. B., Yıldırım E., Kocaçınar B., Patlar Akbulut F.
2022 Innovations in Intelligent Systems and Applications Conference, ASYU 2022, Antalya, Turkey, 7 - 09 September 2022
- IV. **Global impact of the pandemic on education: a study of natural language processing**
Ayaz T. B., Uslu M. S., Agcabay I., Ahmad F., Korkmaz O. F., Kureksiz M., Ulucam E., Yıldırım E., Kocacınar B., Patlar Akbulut F.
2022 Innovations in Intelligent Systems and Applications Conference, ASYU 2022, Antalya, Turkey, 7 - 09 September 2022
- V. **Simultaneous Monitoring of ECG and EDA Using a Wearable Armband for Analyzing Sympathetic Nerve Activity**
Mohaddes F., Zhou Y., Pedersen J., Patlar Akbulut F., Lee B., Misra V.
239th ECS Meeting with the 18th International Meeting on Chemical Sensors (IMCS), North Carolina, United States Of America, 30 May 2021
- VI. **A novel monolithic array of multiple metal oxide sensors for E-Nose applications via selective on-chip annealing of nanolayered ALD stacks**
Tanneeru A., PATLAR AKBULUT F., Lee B., Misra V.
18th IEEE Sensors Conference, Montreal, Canada, 27 - 30 October 2019
- VII. **e-Vital: A Wrist-Worn Wearable Sensor Device for Measuring Vital Parameters**
PATLAR AKBULUT F., Ozgur O., Cinar O.
Medical Technologies Congress (TIPTEKNO), İzmir, Turkey, 3 - 05 October 2019, pp.5-8
- VIII. **Estimation of Beat-to-Beat Interval from Wearable Photoplethysmography Sensor on Different Measurement Sites During Daily Activities**
PATLAR AKBULUT F., Lawless K., Tanneeru A., Rao S., Lee B., Misra V.
17th IEEE SENSORS Conference, New Delhi, India, 28 - 31 October 2018, pp.657-660
- IX. **Smart Wearable Patient Tracking Systems**
PATLAR AKBULUT F., Akan A.
Medical Technologies National Conference (TIPTEKNO), Bodrum, Turkey, 15 - 18 October 2015
- X. **Akut Koroner Sendromu ön tanısı için Sınıflandırma Yöntemleri**
Erkan A., PATLAR AKBULUT F., Şenocak M., AKAN A.
Tıp Teknolojileri Ulusal Kongresi, Antalya, Turkey, 31 October - 02 November 2013
- XI. **HMM based classification of sports videos using color feature**
Hanna J., Patlar Akbulut F., Akbulut A., Mendi E., Bayrak C.
2012 6th IEEE International Conference Intelligent Systems, IS 2012, Sofija, Bulgaria, 6 - 08 September 2012,

pp.388-390

XII. Agent based pornography filtering system

Akbulut A., Patlar Akbulut F., Bayrak C., Mendi E., Hanna J.

International Symposium on INnovations in Intelligent SysTems and Applications, INISTA 2012, Trabzon, Turkey, 2 - 04 July 2012

XIII. Agent based production line monitoring system

Akbulut A., Patlar Akbulut F.

IADIS International Conference Intelligent Systems and Agents 2011, Part of the IADIS Multi Conference on Computer Science and Information Systems 2011, MCCSIS 2011, Rome, Italy, 24 - 26 July 2011, pp.82-86

XIV. Design of speaker independent turkish speech control system in noisy vehicle environment

Patlar Akbulut F., Akbulut A.

IASTED International Conference on Signal and Image Processing and Applications, SIPA 2011, Crete, Greece, 22 - 24 June 2011, pp.93-97

XV. Wireless sensor networks for space and Solar-system missions

Akbulut A., Patlar Akbulut F., Zaim A. H., Yilmaz G.

5th International Conference on Recent Advances in Space Technologies, RAST 2011, İstanbul, Turkey, 9 - 11 June 2011, pp.616-618

XVI. Triphone based continuous speech recognition system for Turkish language using hidden Markov model

Patlar Akbulut F., Akbulut A.

12th IASTED International Conference on Signal and Image Processing, SIP 2010, Maui, HI, United States Of America, 23 - 25 August 2010, pp.13-17

Supported Projects

Patlar Akbulut F., Akbulut A., Tarakci E., Research Project of the Presidency of Turkey Health Institutes (TÜSEB), NÖRALSİS-Sanal Klinik: Nörodejeneratif Hastalıkların Yönetiminde Giyilebilir Biyosensör Destekli Tele-izlem ve Tele-rehabilitasyon Sisteminin Geliştirilmesi, 2024 - 2026

PATLAR AKBULUT F., Project Supported by Higher Education Institutions, İş stresine bağlı etkilerin ve duygusal reaksiyonların analizi için fizyolojik ve çevresel sinyal tabanlı deneyim örnekleme çerçevesi, 2020 - 2022

Patlar Akbulut F., Project Supported by Public Organizations in Other Countries, Development of Wearable Electronics for Ecological Measurement of Neurocognitive and Affective Function in Adolescence and Maturation of Stress Pathways and Vulnerability, 2017 - 2020

Patlar Akbulut F., Project Supported by Public Organizations in Other Countries, Ultra Low-power Sensor Array for Environmental Monitoring, 2017 - 2019

Scientific Refereeing

NEURAL COMPUTING AND APPLICATIONS, Journal Indexed in SCI-E, April 2017

APPLIED SOFT COMPUTING JOURNAL, Journal Indexed in SCI-E, February 2017

APPLIED SOFT COMPUTING JOURNAL, Journal Indexed in SCI-E, July 2016

Metrics

Publication: 43

Citation (WoS): 95

Citation (Scopus): 362

H-Index (WoS): 5

H-Index (Scopus): 12

Invited Talks

Wearable Technology and Healthcare, Conference, International Biomedtech Congress, Turkey, May 2021

Scholarships

NSF ASSIST Nanosystems Center, Postdoctoral Research Scholarship, University, 2018 - 2019

Non Academic Experience

Technology Development Zone, Trlogic Bilgi Teknolojileri Anonim Şirketi, Ar-Ge

Company, Ericsson Telekomünikasyon A.Ş., Veri Analiz

Company, Aras Kargo A.Ş., Analiz

Company, Bilgi Sistemleri San. ve Tic. A.Ş., Yazılım