

## Asst. Prof. HANDE ALEMDAR

### Personal Information

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### Education Information

Doctorate, Bogazici University, Institute Of Science, Bilgisayar Mühendisliği, Turkey 2009 - 2015

Postgraduate, Bogazici University, Institute Of Science, Bilgisayar Mühendisliği, Turkey 2007 - 2009

Undergraduate, Bogazici University, Faculty Of Engineering, Bilgisayar Mühendisliği, Turkey 1999 - 2004

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Human activity recognition with wireless sensor networks using machine learning, Boğaziçi Üniversitesi, Bilgisayar Mühendisliği (Dr), 2015

Postgraduate, RFID enhanced wireless sensor networks for healthcare monitoring, Boğaziçi Üniversitesi, Bilgisayar Mühendisliği (YI) (Tezli), 2009

### Research Areas

Computer Sciences, Artificial Intelligence, Computer Learning and Pattern Recognition, Engineering and Technology

### Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty Of Engineering, Department Of Computer Engineering, 2018 - Continues

Assistant Professor, Middle East Technical University, Faculty Of Engineering, Department Of Computer Engineering, 2017 - 2018

Research Assistant, Bogazici University, Faculty Of Engineering, Department Of Computer Engineering, 2009 - 2015

### Courses

BIG DATA ANALYTICS, Postgraduate, 2018 - 2019

### Advising Theses

Onur E., Alemdar H., Balanced Path Generation and Reliability Extension for In-band Network Telemetry, Postgraduate, G.ŞİMŞEK(Student), 2021  
Alemdar H., ABSTRACTIVE TEXT SUMMARIZATION ON WIKIHOW DATASET USING SENTENCE EMBEDDINGS, Postgraduate, B.TOZYILMAZ(Student), 2019  
Alemdar H., Base Station Power Optimization for Green Networks Using Reinforcement Learning, Postgraduate, S.AKTAŞ(Student), 2019  
Alemdar H., Spatio-Temporal Cohesive Networks for Evaluating Team Behavior in Soccer, Postgraduate, E.KÜLAH(Student), 2019  
Alemdar H., Covert channel detection using machine learning methods, Postgraduate, İ.GAMZE(Student), 2019  
Alemdar H., Precise indoor positioning using Bluetooth Low Energy (BLE) technology, Postgraduate, A.KEREM(Student), 2019

## Designed Lessons

Alemdar H., BIG DATA ANALYTICS, Postgraduate, 2018 - 2019  
Alemdar H., SPECIAL TOPICS IN COMPUTER ENGINEERING: SOFTWARE CONSTRUCTION , Undergraduate, 2018 - 2019

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

- I. **Towards 5G and beyond radio link diagnosis: Radio link failure prediction by using historical weather, link parameters**  
Aktas S., ALEMDAR H., Ergut S.  
COMPUTERS & ELECTRICAL ENGINEERING, vol.99, 2022 (Journal Indexed in SCI)
- II. **A deep learning approach for the transonic flow field predictions around airfoils**  
DURU C., ALEMDAR H., BARAN Ö. U.  
Computers and Fluids, vol.236, 2022 (Journal Indexed in SCI Expanded)
- III. **CNNFOIL: convolutional encoder decoder modeling for pressure fields around airfoils**  
DURU C., ALEMDAR H., BARAN Ö. U.  
Neural Computing and Applications, vol.33, no.12, pp.6835-6849, 2021 (Journal Indexed in SCI)
- IV. **Obstruction-Aware Signal-Loss-Tolerant Indoor Positioning Using Bluetooth Low Energy**  
Taskan A. K. , ALEMDAR H.  
SENSORS, vol.21, no.3, pp.1-28, 2021 (Journal Indexed in SCI)
- V. **Quantifying the value of sprints in elite football using spatial cohesive networks**  
Külah E., Alemdar H.  
CHAOS SOLITONS & FRACTALS, vol.139, 2020 (Journal Indexed in SCI)
- VI. **How do soccer teams coordinate consecutive passes? A visual analytics system for analysing the complexity of passing sequences using soccer flow motifs**  
Malqui J. L. S. , Romero N. M. L. , Garcia R., Alemdar H., Comba J. L.  
COMPUTERS & GRAPHICS-UK, vol.84, pp.122-133, 2019 (Journal Indexed in SCI)
- VII. **Multi-resident activity tracking and recognition in smart environments**  
Alemdar H., Ersoy C.  
JOURNAL OF AMBIENT INTELLIGENCE AND HUMANIZED COMPUTING, vol.8, no.4, pp.513-529, 2017 (Journal Indexed in SCI)
- VIII. **Active learning with uncertainty sampling for large scale activity recognition in smart homes**  
Alemdar H., VAN KASTEREN T. L. M. , Ersoy C.  
JOURNAL OF AMBIENT INTELLIGENCE AND SMART ENVIRONMENTS, vol.9, no.2, pp.209-223, 2017 (Journal Indexed in SCI)
- IX. **Efficient and Versatile FPGA Acceleration of Support Counting for Stream Mining of Sequences and Frequent Itemsets**

PROSTBOUCLE A., PETROT F., LEROY V., ALEMDAR H.

ACM Transactions on Reconfigurable Technology and Systems, vol.10, pp.1-25, 2017 (Journal Indexed in SCI Expanded)

- X. **Daily life behaviour monitoring for health assessment using machine learning: bridging the gap between domains**  
Alemdar H., Tunca C., Ersoy C.  
PERSONAL AND UBIQUITOUS COMPUTING, vol.19, no.2, pp.303-315, 2015 (Journal Indexed in SCI)
- XI. **Multimodal Wireless Sensor Network-Based Ambient Assisted Living in Real Homes with Multiple Residents**  
Tunca C., Alemdar H., Ertan H., Incel O. D. , Ersoy C.  
SENSORS, vol.14, no.6, pp.9692-9719, 2014 (Journal Indexed in SCI)
- XII. **Wireless sensor networks for healthcare: A survey**  
Alemdar H., Ersoy C.  
COMPUTER NETWORKS, vol.54, no.15, pp.2688-2710, 2010 (Journal Indexed in SCI)
- XIII. **Wireless Healthcare Monitoring with RFID-Enhanced Video Sensor Networks**  
Alemdar H., Durmus Y., Ersoy C.  
INTERNATIONAL JOURNAL OF DISTRIBUTED SENSOR NETWORKS, 2010 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **Prediction of the Ball Location on the 2D Plane in Football Using Optical Tracking Data**  
Amirli A., Alemdar H.  
Academic Platform-Journal of Engineering and Science, vol.10, no.1, pp.1-8, 2022 (National Refreed University Journal)
- II. **Base Station Power Optimization for Green Networks Using Reinforcement Learning**  
Aktaş S., Alemdar H.  
Sakarya University Journal of Computer and Information Sciences (Online), vol.4, no.2, pp.244-265, 2021 (National Refreed University Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **The Effect of Loss Functions on the Deep Learning Modeling for the Flow Field Predictions Around Airfoils**  
Doğan A., Duru C., Alemdar H., Baran Ö. U.  
11th ANKARA INTERNATIONAL AEROSPACE CONFERENCE, Ankara, Turkey, 8 - 10 September 2021, pp.1-9
- II. **Covert Channel Detection Using Machine Learning**  
Çavuşoğlu İ. G. , Alemdar H., Onur E.  
28th Signal Processing and Communications Applications Conference (SIU), Gaziantep, Turkey, 5 - 07 October 2020, pp.1-4
- III. **DroPPPP: A P4 Approach to Mitigating DoS Attacks in SDN**  
Simsek G., BOSTAN H., Sarica A. K. , Sarikaya E., KELEŞ A., ANGIN P., ALEMDAR H., ONUR E.  
20th World Conference on Information Security Applications, WISA 2019, Jeju Island, South Korea, 21 - 24 August 2019, pp.55-66
- IV. **Multi-Connectivity Enabled User Association**  
Simsek G., Alemdar H., Onur E.  
30th IEEE Annual International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC 2019, İstanbul, Turkey, 8 - 11 September 2019
- V. **Predicting soccer events from optical tracking data Optik takip verisinden futbol olaylarinin kestirimi**

Özdemir E., ALEMDAR H.

26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4

- VI. **Scalable high-performance architecture for convolutional ternary neural networks on FPGA**  
Prost-Boucle A., BOURGE A., Petrot F., Alemdar H., CALDWELL N., Leroy V.  
27th International Conference on Field Programmable Logic and Applications, FPL 2017, Gent, Belgium, 4 - 06 September 2017
- VII. **Ternary Neural Networks for Resource-Efficient AI Applications**  
Alemdar H., Leroy V., Prost-Boucle A., Petrot F.  
International Joint Conference on Neural Networks (IJCNN), Alaska, United States Of America, 14 - 19 May 2017, pp.2547-2554
- VIII. **Sleep Quality Monitoring with Ambient and Mobile Sensing**  
Kahveci A. Y. , Alemdar H., Ersoy C.  
2015 23RD SIGNAL PROCESSING AND COMMUNICATIONS APPLICATIONS CONFERENCE (SIU), Malatya, Turkey, 16 - 19 May 2015
- IX. **Multi-Resident human behaviour identification in ambient assisted living environments**  
Alemdar H.  
16th ACM International Conference on Multimodal Interaction, ICMI 2014, İstanbul, Turkey, 12 - 16 November 2014, pp.369-373
- X. **A Unified Model for Human Behavior Modeling using a Hierarchy with a Variable Number of States**  
Alemdar H., van Kasteren T. L. M. , Niessen M. E. , MERENTİTİS A., Ersoy C.  
22nd International Conference on Pattern Recognition (ICPR), Stockholm, Sweden, 24 - 28 August 2014, pp.3804-3809
- XI. **ARAS Human Activity Datasets In Multiple Homes with Multiple Residents**  
Alemdar H., Ertan H., Incel O. D. , Ersoy C.  
7th International Conference on Pervasive Computing Technologies for Healthcare (PervasiveHealth), Venice, Italy, 5 - 08 May 2013, pp.232-235
- XII. **A smart couch design for improving the quality of life of the patients with cognitive diseases Bilişsel rahatsızlıkları olan kişi lerin yaşam kalitesini artırmak için akıllı bir koltuk tasarımı**  
Ertan H., Alemdar H., Incel Ö. D. , Ersoy C.  
2012 20th Signal Processing and Communications Applications Conference, SIU 2012, Fethiye, Mugla, Turkey, 18 - 20 April 2012
- XIII. **Using Active Learning to Allow Activity Recognition on a Large Scale**  
ALEMDAR H., van kasteren t., ERSOY C.  
AMBIENT INTELLIGENCE, Amsterdam, Netherlands, 16 - 18 November 2011, vol.7040, pp.105-114
- XIV. **A robust multimodal fall detection method for ambient assisted living applications Ortam destekli yaşam uygulamaları için gürbüz düşme sezme yöntemi**  
Alemdar H., Kara Y. E. , Özen M. O. , Yavuz G. R. , Incel Ö. D. , Akarun L., Ersoy C.  
18th IEEE Signal Processing and Communications Applications Conference, SIU 2010, Diyarbakır, Turkey, 22 - 24 April 2010, pp.204-207
- XV. **WeCare: Wireless enhanced healthcare**  
Alemdar H., Ersoy C.  
12th Mediterranean Conference on Medical and Biological Engineering and Computing, MEDICON 2010, Chalkidiki, Greece, 27 - 30 May 2010, vol.29, pp.855-858
- XVI. **Demo Abstract: Multi-modal Fall Detection within the WeCare Framework**  
Alemdar H., Yavuz G. R. , Ozen M. O. , Kara Y. E. , Incel O. D. , Akarun L., Ersoy C.  
9th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN), Stockholm, Sweden, 12 - 16 April 2010, pp.436-437
- XVII. **Using Wireless Sensor Network Technologies for Elder and Child Care: An Application Architecture Proposal**  
Alemdar H., Ersoy C.

## Supported Projects

ALEMDAR H., KARA M. Y. , Project Supported by Higher Education Institutions, Bal Arısı Kolonilerinin Bilgisayarlı Görü ve Çevresel Algılayıcılar ile Takibi ve Kovan Sağlığının Yapay Zeka ile Belirlenmesi, 2022 - Continues

ALEMDAR H., ERDEM B., Project Supported by Higher Education Institutions, Kraliçe ile İşçi Arıların Davranışsal Etkileşimleri ve Beslenmesinin İncelenmesi ile Kraliçe Arı Sağlığı ve Gereksinimlerinin Belirlenmesi, 2021 - Continues

Şahin E., Turgut A. E. , Alemdar H., H2020 Project, ROBOTic Replicants for Optimizing the Yield by Augmenting Living Ecosystems, 2021 - 2026

ALEMDAR H., Project Supported by Higher Education Institutions, Spor Uygulamalarında Yorumlanabilir Makine Öğrenmesi, 2018 - 2021

Alemdar H., TUBITAK Project, Yorumlanabilir Makine Öğrenmesi ile İnsan-Makine Etkileşiminin Artırılması, 2018 - 2020

Alemdar H., TUBITAK Project, DERİN YAPAY SİNİR AĞLARI İÇİN ENERJİ VERİMLİ OTONOM DONANIM VE UYGULAMALARI , 2017 - 2018

## Scientific Refereeing

ACM TRANSACTIONS ON INTERNET TECHNOLOGY, Journal Indexed in SCI-E, August 2020

JOURNAL OF AMBIENT INTELLIGENCE AND SMART ENVIRONMENTS, Journal Indexed in SCI-E, August 2019

IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, Journal Indexed in SCI-E, July 2019

TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, Journal Indexed in SCI-E, June 2019

Project Supported by Higher Education Institutions, BAP Other, Middle East Technical University, Turkey, June 2019

## Citations

Total Citations (WOS):951

h-index (WOS):8