Assoc. Prof. HANDE ALEMDAR

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International Researcher IDs

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Publons / Web Of Science ResearcherID: D-3270-2014

ScopusID: 35101325500

Yoksis Researcher ID: 145571

Education Information

I. Doctorate, Bogazici University, Instıtute Of Scıence, Bilgisayar Mühendisliği, Turkey 2009 - 2015
II. Postgraduate, Bogazici University, Instıtute Of Scıence, Bilgisayar Mühendisliği, Turkey 2007 - 2009
III. Undergraduate, Bogazici University, Faculty Of Engineering, Bilgisayar Mühendisliği, Turkey 1999 - 2004

Foreign Languages

I. English, C1 Advanced

Dissertations

I. Doctorate, Human activity recognition with wireless sensor networks using machine learning, Boğaziçi Üniversitesi, Bilgisayar Mühendisliği (Dr), 2015
II. Postgraduate, RFID enhanced wireless sensor networks for healthcare monitoring, Boğaziçi Üniversitesi, Bilgisayar Mühendisliği (Yl) (Tezli), 2009

Research Areas

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

Academic Titles / Tasks

I. Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering, 2023 - Continues
II. Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering, 2018 - 2023
III. Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering, 2017 - 2018
IV. Research Assistant, Bogazici University, Faculty Of Engineering, Department Of Computer Engineerıng, 2009 - 2015

Academic and Administrative Experience

I. Deputy Head of Department, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering, 2022 - Continues

Advising Theses

I. Alemdar H., Semi-automated image labeling framework for honeybee (Apis mellifera) detection and tracking in automated bee hive applications, Postgraduate, A.EMRE(Student), 2023
II. Alemdar H., Enhancing the stability and quality assessment of visual explanations for thorax disease classification using deep learning, Doctorate, S.RAHIMIAGHDAM(Student), 2023
III. Baran Ö. U., Alemdar H., Rapid lift and drag prediction tool with multi-layer perceptron model for supercritical airfoils, Postgraduate, C.ATLI(Student), 2023
IV. ALEMDAR H., Explainable recommendations using extracted topics from item reviews and word matching, Postgraduate, M.TUNÇ(Student), 2022
V. ALEMDAR H., Extraction of interpretable decision rules from black-box models for classification tasks, Postgraduate, E.BERK(Student), 2022
VI. Baran Ö. U., Alemdar H., A deep learning methodology for the flow field prediction around airfoils, Doctorate, C.DURU(Student), 2021
VII. Onur E., Alemdar H., Balanced Path Generation and Reliability Extension for In-band Network Telemetry, Postgraduate, G.ŞİMŞEK(Student), 2021
VIII. Alemdar H., Base Station Power Optimization for Green Networks Using Reinforcement Learning, Postgraduate, S.AKTAŞ(Student), 2019
IX. Alemdar H., ABSTRACTIVE TEXT SUMMARIZATION ON WIKIHOW DATASET USING SENTENCE EMBEDDINGS, Postgraduate, B.TOZYILMAZ(Student), 2019
X. Alemdar H., Spatio-Temporal Cohesive Networks for Evaluating Team Behavior in Soccer, Postgraduate, E.KÜLAH(Student), 2019
XI. Alemdar H., Covert channel detection using machine learning methods, Postgraduate, İ.GAMZE(Student), 2019
XII. Alemdar H., Precise indoor positioning using Bluetooth Low Energy (BLE) technology, Postgraduate, A.KEREM(Student), 2019

Designed Lessons

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

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Evaluating the quality of visual explanations on chest X-ray images for thorax diseases classification**
Rahimiaghdam S., ALEMDAR H.
Neural Computing and Applications, 2024 (SCI-Expanded)
II. **Effects of lithium on locomotor activity and circadian rhythm of honey bees**
ERDEM B., ARSLAN O. C., SEVİN S., GÖZEN A. G., Agosto-Rivera J. L., Giray T., ALEMDAR H.
Scientific Reports, vol.13, no.1, 2023 (SCI-Expanded)
III. **COVID-19 forecasting using shifted Gaussian Mixture Model with similarity-based estimation**

Külah E., Çetinkaya Y. M., Özer A. G., Alemdar H.

EXPERT SYSTEMS WITH APPLICATIONS, vol.214, 2023 (SCI-Expanded)

IV. **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 (SCI-Expanded)

V. **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 (SCI-Expanded)

VI. **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 (SCI-Expanded)

VII. **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 (SCI-Expanded)

VIII. **Quantifying the value of sprints in elite football using spatial cohesive networks**

Külah E., Alemdar H.

CHAOS SOLITONS & FRACTALS, vol.139, 2020 (SCI-Expanded)

IX. **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., Alendar H., Comba J. L.

COMPUTERS & GRAPHICS-UK, vol.84, pp.122-133, 2019 (SCI-Expanded)

X. **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 (SCI-Expanded)

XI. **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 (SCI-Expanded)

XII. **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 (SCI-Expanded)

XIII. **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 (SCI-Expanded)

XIV. **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 (SCI-Expanded)

XV. **Wireless sensor networks for healthcare: A survey**

Alemdar H., Ersoy C.

COMPUTER NETWORKS, vol.54, no.15, pp.2688-2710, 2010 (SCI-Expanded)

XVI. **Wireless Healthcare Monitoring with RFID-Enhanced Video Sensor Networks**

Alemdar H., Durmus Y., Ersoy C.

INTERNATIONAL JOURNAL OF DISTRIBUTED SENSOR NETWORKS, 2010 (SCI-Expanded)

Articles Published in Other Journals

I. **A Minimally Invasive Approach Towards "Ecosystem Hacking" With Honeybees**
Stefanec M., Hofstadler D. N., Krajnik T., TURGUT A. E., ALEMDAR H., Lennox B., ŞAHİN E., Arvin F., Schmickl T.
FRONTIERS IN ROBOTICS AND AI, vol.9, 2022 (ESCI)

II. **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 (Peer-Reviewed Journal)

III. **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 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

I. **Robotic Replicants for Improving Queen Bee Health and Persistence of the Honey Bee Colony**
ALEMDAR H., Arslan O. C., Arvin F., Broughton G., Dvoracek D., Erdem B., GÖDELEK O., Güderer B. Y., Kara M. Y., Keyvan E. E., et al.
47th APIMONDIA International Apicultural Congress, İstanbul, Turkey, 24 August 2022

II. **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

III. **Covert Channel Detection Using Machine Learning**
Cavusoglu I. G., ALEMDAR H., ONUR E.
28th Signal Processing and Communications Applications Conference (SIU), ELECTR NETWORK, 5 - 07 October 2020

IV. **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

V. **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

VI. **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

VII. **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

VIII. **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

IX. **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

X. **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

XI. **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

XII. **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

XIII. **A smart couch design for improving the quality of life of the patients with cognitive diseases Bilişsel rahatsizliklari olan kişi lerin yaşam kalitesini artirmak için akilli bir koltuk tasarimi**
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

XIV. **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

XV. **A robust multimodal fall detection method for ambient assisted living applications Ortam destekli yaşam uygulamalari 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

XVI. **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

XVII. **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

XVIII. **Using Wireless Sensor Network Technologies for Elder and Child Care: An Application Architecture Proposal**
Alemdar H., Ersoy C.

IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009, pp.930-933

Supported Projects

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

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

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

2020
IV. Alemdar H., TUBITAK Project, DERİN YAPAY SİNİR AĞLARI İÇİN ENERJİ VERİMLİ OTONOM DONANIM VE
UYGULAMALARI , 2017 - 2018

Scientific Refereeing

I. TUBITAK Project, 1512 - Progressive Support Program for Entrepreneurship, Middle East Technical University,
Turkey, November 2021
II. ACM TRANSACTIONS ON INTERNET TECHNOLOGY, Journal Indexed in SCI-E, August 2020
III. JOURNAL OF AMBIENT INTELLIGENCE AND SMART ENVIRONMENTS, Journal Indexed in SCI-E, August 2019
IV. IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, Journal Indexed in SCI-E, July 2019
V. TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, Journal Indexed in SCI-E, June
2019
VI. Project Supported by Higher Education Institutions, BAP Other, Middle East Technical University, Turkey, June
2019

Metrics

Publication: 37
Citation (WoS): 1192
Citation (Scopus): 1657
H-Index (WoS): 11
H-Index (Scopus): 12

Non Academic Experience

I. Akbank
II. Turkcell
III. Telenity