

Assoc. Prof. HANDE ARGUNSAH

Personal Information

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International Researcher IDs

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Biography

Hande Argunsah is an assistant professor in Medical Engineering at Acibadem University. Her Ph.D. is in Biomedical Engineering at Cleveland State University and Cleveland Clinic and she carried out postdoctoral research at Kessler Foundation. Her research interests are robotic rehabilitation and human robot interaction.

Education Information

Post Doctorate, Kessler Foundation, Human Performance and Engineering , United States Of America 2014 - 2015

Doctorate, Cleveland State University, faculty of engineering, Biomedical Engineering, United States Of America 2007 - 2013

Postgraduate, Kent State University, Faculty of Engineering, United States Of America 2005 - 2007

Undergraduate, Bahcesehir University, Faculty Of Engineering, Department Of Industrial Engineering, Turkey 2001 - 2005

Foreign Languages

German, A2 Elementary

English, B2 Upper Intermediate

Dissertations

Doctorate, BIOMECHANICS OF PROSTHETIC KNEE SYSTEMS: ROLE OF DAMPENING AND ENERGY STORAGE SYSTEMS, Cleveland State University, faculty of engineering, Chemical and Biomedical Engineering, 2013

Research Areas

Biomedical Engineering, Biomechanics, Motion Analysis, Clinical Robots, Rehabilitation

Academic Titles / Tasks

Associate Professor, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2024 - Continues

Assistant Professor, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2015 - Continues
Expert, New Jersey Institute of Technology, 2014 - 2014
Research Assistant, Cleveland State University, 2008 - 2013

Academic and Administrative Experience

Member of the Commission, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2025 - Continues
Member of the Commission, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2025 - Continues
Erasmus Program Department Coordinator, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2024 - Continues
Program Accreditation-Self-Assessment Committee Member, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2021 - Continues
Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2020 - Continues
Yükseköğretim Kalite Kurulu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2020 - Continues
Rektörlük Stratejik Plan Komisyonu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2020 - Continues
Bölüm Kalite Komisyonu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2020 - Continues
Akreditasyon, Sürekli Gelişim ve Yenilenme Kurulu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2020 - Continues
Bölüm Stratejik Plan Komisyonu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2020 - Continues
Vice Dean, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2020 - Continues
Rektörlük Kalite Komisyonu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2019 - Continues
Enstitü Yönetim Kurulu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2019 - Continues
Fakülte Kurulu Üyesi, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2019 - Continues
Head of Department, Acibadem Mehmet Ali Aydinlar University, Graduate School Of Natural And Applied Sciences, Biomedical Engineering With Thesis, 2023 - 2025
Assistant Director of the Institute, Acibadem Mehmet Ali Aydinlar University, Graduate School Of Natural And Applied Sciences, Biomedical Engineering With Thesis, 2017 - 2024
UZEM Müdürü, Acibadem Mehmet Ali Aydinlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, 2016 - 2020

Courses

Postgraduate

Advanced Biomechanics, Postgraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021
Biomechanics, Postgraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019

Undergraduate

Biomechanics, Undergraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Introduction to Medical Engineering, Undergraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Optimization, Undergraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Introduction to Medical Engineering, Undergraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Introduction Biomedical Engineering, Undergraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023
Sağlıkta Girişimcilik, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
Quality Management in Healthcare Systems, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

Supervised Theses

Argunsah H., Selective Dorsal Rhizotomy for Pediatric and Adult Patients with Hereditary Spastic Paraparesis: Pre- and Postoperative Gait Analysis, Postgraduate, E.Şaban(Student), Continues
Argunsah H., AI implementation to Upper Extremity Rehabilitation, Doctorate, B.YALÇIN(Student), Continues
Argunsah H., Biomedical Engineering, Doctorate, S.Özbal(Student), Continues
Argunsah H., AI applications in Robotic Rehabilitation, Doctorate, T.Emre(Student), Continues
Argunsah H., Explainable AI Applications in Musculoskeletal Rehabilitation, Doctorate, E.Kaya(Student), Continues
Argunşah Bayram H., Development of a Wearable Balance Sensor That Provides Real-time Tactile Biofeedback and Preliminary Test Results on Pediatric Brain Tumor Patient , Postgraduate, B.YALÇIN(Student), 2019

Jury Memberships

Post Graduate, Post Graduate, Acibadem Mehmet Ali Aydınlar University, May, 2023
Doctoral Examination, Doctoral Examination, Acibadem Mehmet Ali Aydınlar University, May, 2023
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Acibadem Mehmet Ali Aydınlar University, May, 2023
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Acibadem Mehmet Ali Aydınlar University, February, 2022
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Acibadem Mehmet Ali Aydınlar University, February, 2022
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Acibadem Mehmet Ali Aydınlar Üniversitesi, June, 2019

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Infant-carrying methods and their biomechanical influence on maternal gait patterns and joint mechanics**
Pehlivan S., Tanrıverdi M., Argunsah H., Uygur Şahin T.
JOURNAL OF BACK AND MUSCULOSKELETAL REHABILITATION, vol.1, no.1, pp.1-10, 2025 (SCI-Expanded)
- II. **Eye-tracking insights into cognitive strategies, learning styles, and academic outcomes of Turkish medicine students**
Argunsah H., Altıntaş L., Şahiner A. M.
BMC MEDICAL EDUCATION, vol.25, no.276, pp.1-10, 2025 (SCI-Expanded)
- III. **Exploring the Contribution of Joint Angles and sEMG Signals on Joint Torque Prediction Accuracy**

using LSTM-Based Deep Learning Techniques

Argunsah H., Kaya E.

COMPUTER METHODS IN BIOMECHANICS AND BIOMEDICAL ENGINEERING, vol.28, no.13, pp.1-10, 2024 (SCI-Expanded)

- IV. **Effectiveness of Serial Casting Alone and in Combination with Botulinum Neurotoxin in Pediatric Spastic Cerebral Palsy Patients**
Argunsah H., Bentley K., Androwis G., Higgins L., Nolan K.
ACTA OF BIOENGINEERING AND BIOMECHANICS, vol.25, no.3, pp.87-92, 2023 (SCI-Expanded)
- V. **Balance Control via Tactile Biofeedback in Children with Cerebral Palsy**
ARGUNSAH H., YALÇIN B.
ACTA OF BIOENGINEERING AND BIOMECHANICS, vol.25, no.1, pp.161-171, 2023 (SCI-Expanded)
- VI. **The influence of biofeedback on physiological and kinematic variables of treadmill running**
Bayram H., Yalçın B.
International Journal of Performance Analysis in Sport, vol.21, no.1, pp.156-169, 2021 (SCI-Expanded)
- VII. **Dynamic Functional Stiffness Index of the Ankle Joint During Daily Living**
Bayram H., BAYRAM M. S. B.
JOURNAL OF FOOT & ANKLE SURGERY, vol.57, no.4, pp.668-674, 2018 (SCI-Expanded)
- VIII. **Active functional stiffness of the knee joint during activities of daily living: A parameter for improved design of prosthetic limbs**
Bayram H., Chien C., Davis B. L.
CLINICAL BIOMECHANICS, vol.29, no.10, pp.1193-1199, 2014 (SCI-Expanded)

Articles Published in Other Journals

- I. **Real-time tactile biofeedback device use for improving balance control of an adolescent with medulloblastoma**
ARGUNSAH H., YALÇIN B.
JOURNAL OF ENABLING TECHNOLOGIES, vol.17, no.3/4, pp.73-83, 2023 (ESCI)
- II. **Investigation Of Glenohumeral Internal Rotation Deficit Tendency of Adolescent Female Volleyball Players During Passive and Dynamic Movements**
Argunsah H.
Türk Spor ve Egzersiz Dergisi, vol.24, no.3, pp.306-313, 2022 (Peer-Reviewed Journal)
- III. **Real-Time Balance Feedback Mechanism For Orthopedic and Neuromuscular Diseases Rehabilitation Practices**
Argunşah Bayram H., Yalçın B.
Acıbadem Sağlık Bilimleri Dergisi, vol.11, no.3, pp.412-417, 2020 (Peer-Reviewed Journal)
- IV. **Recent Developments in Above-Knee Prosthetics and the Importance of Energy Recovery in Transfemoral Amputee Gait**
ARGUNŞAH BAYRAM H.
Acıbadem Sağlık Bilimleri Dergisi, vol.6, no.2, pp.61-68, 2015 (Peer-Reviewed Journal)

Books

- I. **Biomimetics- Nature Based Innovation Application of Biomimetics in the Design of Medical Devices**
Argunşah Bayram H.
in: Biomimetics: Nature-Based Innovation, Joseph Bar-Kohen, Editor, CRC, New York , New-York, pp.445-460, 2011

Papers Published in Refereed Scientific Meetings

- I. **KNEE JOINT IMPEDANCE OPTIMIZATIONS FOR DESIGN OF TRANSFEMORAL PROSTHESES**
ARGUNŞAH H.
5. HAGIA SOPHIA INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY SCIENTIFIC STUDIES, İstanbul, Turkey, 17 - 18 October 2022
- II. **CHANGES IN POSTURAL CONTROL AND KINEMATIC VARIABLES IN RESPONSE TO ANKLE JOINT TAPING IN PROFESSIONAL BASKETBALL PLAYERS**
Argunsah H.
EGE International Congress on Innovation Technologies and Engineering, İzmir, Turkey, 2 - 04 September 2022, pp.354-361
- III. **GLENOHUMERAL INTERNAL ROTATION DEFICIT TENDENCY OF OVERHEAD ATHLETES**
ARGUNŞAH H.
VI-INTERNATIONAL EUROPEAN CONFERENCE ON INTERDISCIPLINARY SCIENTIFIC RESEARCH, Budapest, Hungary, 26 August 2022, pp.107-114
- IV. **Investigation of Glenohumeral Internal Rotation Deficit Tendency of Adolescent Female Volleyball Players with Inertial Measurement Unit Based Motion Capture System during Passive and Dynamic Movements**
Yalçın B., Argunsah H.
Neuroscience 2021, Washington, United States Of America, 8 - 11 November 2021, pp.1
- V. **Changes in postural control and kinematic variables in response to ankle joint taping in professional basketball players**
Yalçın B., Argunsah H.
Neuroscience 2021, Washington, United States Of America, 8 - 11 November 2021, pp.1
- VI. **Eğitimde Disiplinler Arası Uygulamalar: Sağlıkta İnovasyon Metodolojisi "Biyotasarım"**
Argunşah Bayram H., Bayram M. S. B., Şahiner A. M., Altıntaş L., Akın A.
Ulusal Tıp Eğitimi Sempozyumu 2019, Eskişehir, Turkey, 10 - 12 April 2019, vol.1, no.981335, pp.1-2
- VII. **Klinikte Biyolojik Geri Bildirim Uygulamaları**
ARGUNŞAH BAYRAM H.
21. Biyomedikal Bilim ve Teknoloji Sempozyumu, Turkey, 15 - 16 December 2018
- VIII. **Real-Time Balance Feedback Mechanism during Orthopedic and Neuromuscular Disease Rehabilitation**
ARGUNŞAH BAYRAM H.
Society for Neuroscience, 4 - 07 November 2018
- IX. **Real Time Balance Feedback Mechanism During Orthopedic and Neuromuscular Disease Rehabilitation**
Yalçın B., Argunşah Bayram H.
Society for Neuroscience 2018, California, United States Of America, 3 - 07 November 2018, pp.1
- X. **A novel algorithm for individual injury risk mapping with preselected background assessment factors may avoid non-contact injuries with personalized training program**
Argunşah Bayram H.
Society for Neuroscience 2018, California, United States Of America, 2 - 04 November 2018, pp.149-151
- XI. **Correlation of hand-eye coordination and successful free shot rate of elite basketball players**
Argunşah Bayram H.
Society for Neuroscience 2018, California, United States Of America, 1 - 04 November 2018, pp.356
- XII. **Biyolojik Geri Beslemenin Koşu Esnasında Vücut Oryantasyonu ve Diz Biyomekaniğine olan Etkisinin İncelenmesi**
ARGUNŞAH BAYRAM H.
21st National Biomedical Engineering Meeting (BIYOMUT), Turkey, 24 - 26 November 2017

Supported Projects

Argunsah H., TUBITAK Project, İnsan Fonksiyonunu Tehdit Eden Zorluklara Karşı Nöroteknolojik Çözümler Platformu, 2023 - 2026

Argunsah H., Research Project of the Presidency of Turkey Health Institutes (TÜSEB), Çocuklar için yapay zeka destekli taşınabilir egzersiz cihazı geliştirilmesi: Toplum 5.0 evde dijital sağlık ve nesnelerin interneti, 2022 - 2024

Argunsah H., Project Supported by Higher Education Institutions, Proje Adı : 20 yaş altı basketbol oyuncularında ayak bileğinin teyp bandaj ile sargılanmasının postüral kontrol ve yaralanma önleme üzerindeki etkilerinin giyilebilir hareket analizi sistemi ile incelemesi, 2021 - 2022

Argunsah H., Yalçın B., Project Supported by Higher Education Institutions, 20 yaş altı basketbol oyuncularında ayak bileğinin teyp bandaj ile yargılanmasının postüral kontrol ve yaralanma önleme üzerindeki etkilerinin giyilebilir hareket analizi sistemi ile incelenmesi , 2021 - 2021

Yalçın B., Argunşah Bayram H., Project Supported by Higher Education Institutions, Kablosuz Haberleşme Yöntemi Kullanarak Düşmeyi Algılayan ve İlgili Birimlere Uyarı Veren Giyilebilir Cihaz, 2018 - 2019

ARGUNSAH H., TUBITAK Project, Biyolojik Geri Bildirim Koşu Esnasında Diz Eklemi Biyomekaniğine ve Kalp Ritmine Olan Etkisi, 2015 - 2017

Argunsah H., Project Supported by Public Organizations in Other Countries, Travmatik Beyin Hasarı Olan hastaların rehabilitasyonunda robotik dış iskeletin kullanılması, 2015 - 2017

Memberships / Tasks in Scientific Organizations

Romatem Akademi, Member, 2025 - Continues, Turkey

Society for Neuroscience, Member, 2018 - Continues, United States Of America

Peer Reviews in Scientific Publications

IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING, SCI Journal, July 2021

CLINICAL BIOMECHANICS, Journal Indexed in SCI-E, May 2019

Scientific Consultations

Romatem, Scientific Consultancy, Acibadem Mehmet Ali Aydınlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, Turkey, 2024 - Continues

Aktif Yaşam ve Sporcu Sağlığı Kuluçka Programı, Scientific Consultancy, Acibadem Mehmet Ali Aydınlar University, Faculty Of Engineering and Natural Sciences, Biomedical Engineering, Turkey, 2024 - 2024

Metrics

Publication: 25

Citation (WoS): 15

Citation (Scopus): 18

H-Index (WoS): 2

H-Index (Scopus): 3

Congress and Symposium Activities

5. INTERNATIONAL CONFERENCE ON CULTURE, CIVILIZATION AND MULTIDISCIPLINARY STUDIES IN SOCIAL SCIENCES, Session Moderator, İstanbul, Turkey, 2022

International Congress on Innovation Technologies & Engineering, Session Moderator, İstanbul, Turkey, 2022

[INTERNATIONAL EUROPEAN CONFERENCE ON INTERDISCIPLINARY SCIENTIFIC RESEARCH-VI], Invited Speaker,
Budapest, Hungary, 2022