Prof. ATİLA YILMAZ

Personal Information

Office Phone: +90 312 297 7028
Fax Phone: +90 312 299 2125
Email: ayilmaz@hacettepe.edu.tr
Web: http://www.ee.hacettepe.edu.tr/?lang=e&link=400201&sublink=130
Address: Hacettepe Universitesi, Elektrik ve Elektronik Müh. Böl. Beytepe 06800, ANKARA

International Researcher IDs
ORCID: 0000-0001-9459-8493
Yoksis Researcher ID: 30160

Education Information

Doctorate, University of Sussex, Trafford Center, Biomedical Engineering, United Kingdom 1993 - 1996
Postgraduate, Manchester Institute of Science and Technology, Control Systems Center, Control And Information Technology, United Kingdom 1990 - 1992
Undergraduate, Hacettepe University, Mühendislik Fakültesi, Elektrik Ve Elektronik, Turkey 1982 - 1986

Foreign Languages

English, C1 Advanced

Research Areas

Biomedical Engineering, Bioengineering and MEMS, Bioinstrumentation and Microelectromechanical Systems (MEMS), Biomedical Image Processing, Biomedical Image Processing, Biomechanics, Motion Analysis, Biosignal Processing, Biosignal Processing, Engineering and Technology

Academic and Administrative Experience

Erasmus Coordinator, Hacettepe University, 2007 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Fine-grained Classification of Solder Joints with α-skew Jensen-Shannon Divergence**
ÜLGER F., Yuksel S. E., YILMAZ A., GÖKCEN D.
IEEE Transactions on Components, Packaging and Manufacturing Technology, vol.13, no.2, pp.257-264, 2023 (SCI-Expanded)

II. **Solder Joint Inspection on Printed Circuit Boards: A Survey and a Dataset**
ÜLGER F., Yuksel S. E., YILMAZ A., GÖKCEN D.
IEEE Transactions on Instrumentation and Measurement, vol.72, 2023 (SCI-Expanded)

III. **Anomaly Detection for Solder Joints Using beta-VAE**

ÜLGER F., YÜKSEL ERDEM S. E., YILMAZ A.

IEEE TRANSACTIONS ON COMPONENTS PACKAGING AND MANUFACTURING TECHNOLOGY, vol.11, no.12, pp.2214-2221, 2021 (SCI-Expanded)

IV. **Modeling and simulation of an anthropomorphic hand prosthesis with an object interaction**

Kaya Z. E., YILMAZ A.

COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol.183, 2020 (SCI-Expanded)

V. **Comparative study for identification of multiple alarms in telecommunication networks**

YILMAZ A.

TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.2, pp.677-688, 2017 (SCI-Expanded)

VI. **ANALYSIS OF GAIT MOTION EQUATIONS AND APPLICATION OF PROPORTIONAL DERIVATIVE CONTROL FOR ELECTRONIC ABOVE KNEE PROSTHESIS**

AKDOGAN K. E., YILMAZ A.

JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.31, no.1, pp.201-209, 2016 (SCI-Expanded)

VII. **Gait motion simulator for kinematic tests of above knee prostheses**

YILMAZ A., ORHANLI T.

IET Science Measurement & Technology, vol.9, no.3, pp.250-258, 2015 (SCI-Expanded)

VIII. **Regional TEC mapping using neural networks**

YILMAZ A., Akdoğan K. E., Gürün M.

RADIO SCIENCE, vol.44, 2009 (SCI-Expanded)

IX. **Application of conformal transformation to elliptic geometry for electric impedance tomography**

YILMAZ A., Akdogan K. E., Saka B.

MEDICAL ENGINEERING & PHYSICS, vol.30, no.2, pp.144-153, 2008 (SCI-Expanded)

X. **Comparative analysis on wavelet-based detection of finite duration low-amplitude signals related to ventricular late potentials**

MOUSA A., Yilmaz A.

PHYSIOLOGICAL MEASUREMENT, vol.25, no.6, pp.1443-1457, 2004 (SCI-Expanded)

XI. **Elliptic cylinder geometry for distinguishability analysis in impedance tomography**

Saka B., YILMAZ A.

IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol.51, no.1, pp.126-132, 2004 (SCI-Expanded)

XII. **Non-linear modeling of parabolic reflector: Neural network approach**

Yilmaz A., Saka B.

ELECTROMAGNETICS, vol.19, no.2, pp.187-200, 1999 (SCI-Expanded)

Books & Book Chapters

I. **Taşınabilir apne tespit cihazı: Donanım ve yazılım**

YILMAZ A., PEKER O.

in: Uyku Sinyallerinin İşlenmesi, Prof. Dr. Osman EROĞUL, Müh. Galip ÖZDEMİR, Editor, Uyku Klinikleri, Ankara, pp.83-94, 2020

II. **Biyokinematik: Kuram, Ölçüm ve Çözümleme Çalışmaları**

Yilmaz A., Orhanlı T.

in: Biyomedikal Mühendisliği ve Uygulamaları, Osman Eroğul, Editor, Türkiye Yayıncılar Birliği, Ankara, pp.50-60, 2019

III. **Biokinematics for Mobility: Theory, Sensors, and Wireless Measurements**

YILMAZ A., ORHANLI T.

in: Telehealth and Mobile Health, Halit Eren, John G. Webster, Editor, CRC Press, Boca Raton, Florida, pp.525-554, 2015

Refereed Congress / Symposium Publications in Proceedings

I. **Performance of using Mel-Frequency Cepstrum Based Features in Nonlinear Classifiers for Phonocardiography Recordings**
Ozkan I., YILMAZ A.
31st European Signal Processing Conference, EUSIPCO 2023, Helsinki, Finland, 4 - 08 September 2023, pp.1190-1194

II. **Defect Classification from Electronic Card Images by Deep Learning Elektronik Kart Görüntülerinden Derin Öğrenme ile Kusur Siniflandirmasi**
Eryilmaz M., Cil M., Akturk S., Tilegi M., Tirak H., YILMAZ A., Yuksel S. E., GÖKCEN D.
30th Signal Processing and Communications Applications Conference, SIU 2022, Safranbolu, Turkey, 15 - 18 May 2022

III. **Classification of Systolic Murmurs by Using Improved Mel-Wavelet Segmentation**
ÖZKAN İ., YILMAZ A.
29th Signal Processing and Communications Applications (SIU), İstanbul, Turkey, 09 June 2021

IV. **Reconstruction of Multiple Inhomogeneities for Circular Model in Electric Impedance Tomography**
Manisalı H., YILMAZ A.
29th Signal Processing and Communications Applications (SIU), İstanbul, Turkey, 09 June 2021

V. **Neural Network Based Real Time Evaluation for Portable Apnea Device with Three Channels**
PEKER O., YILMAZ A.
29th Signal Processing and Communications Applications (SIU), İstanbul, Turkey, 09 June 2021

VI. **Analysis of Portable Apnea Devices: Comparison with Polysomnographic (PSG) Records**
YILMAZ A., Mutlu M. A., Gunay M., DEMİR A. U.
27th Signal Processing and Communications Applications Conference (SIU), Sivas, Turkey, 24 - 26 April 2019

VII. **Improved Segmentation with Dynamic Threshold Adjustment for Phonocardiography Recordings**
ÖZKAN İ., YILMAZ A., Celebi G.
41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Berlin, Germany, 23 - 27 July 2019, pp.6681-6684

VIII. **Mel-Frequency Cepstrum and Wavelet Transform for Phonocardiography Records**
ÖZKAN İ., YILMAZ A., Celebi G.
27th Signal Processing and Communications Applications Conference (SIU), Sivas, Turkey, 24 - 26 April 2019

IX. **Analysis and Comparison of Current Dependent Models of MR (Magnetoreological) Dampers Used in Knee Prosthesis**
Sozeri G., YILMAZ A., ŞAHİN İ.
27th Signal Processing and Communications Applications Conference (SIU), Sivas, Turkey, 24 - 26 April 2019

X. **Analysis of Gait Dynamics with the Double Pendulum Model**
ORHANLI T., YILMAZ A.
27th Signal Processing and Communications Applications Conference (SIU), Sivas, Turkey, 24 - 26 April 2019

XI. **Üç Serbestlik Dereceli Yürüyüş HareketininKinematik Analizi**
ORHANLI T., YILMAZ A.
2018 26th Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018

XII. **Segmentation and Classification of Contractions in Uterine 16 Channels EMG Signals for Preterm Birth Prediction**
Tagdogen Kocak A., YILMAZ A.
26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018

XIII. **Kinematic Analysis of Human Gait with Three Degrees of Freedom**
ORHANLI T., YILMAZ A.
26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018

XIV. **Design of Apnea Detection Interface Including Time Delay Neural Networks for Portable Recording Devices with Three Channels**
Peker O., YILMAZ A., DEMİR A. U.

26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018

XV. **Dynamic tests of MR (Magnetorheologic) damper and analysis of response characteristics in semi-active knee prosthesis MR (Manyetoreolojik) Sönümlendiricinin Dinamik Testleri ve Yari Etkin Diz Protezlerinde Tepki Karakteristiğinin İncelenmesi**
AKALIN C., Orhanli T., YILMAZ A., Sahin I.
25th Signal Processing and Communications Applications Conference, SIU 2017, Antalya, Turkey, 15 - 18 May 2017

XVI. **Wireless and Embedded Controller Card Design for Above-knee Prosthesis with Pneumatic Damper**
ORHANLI T., SARAÇOĞLU M. S., ŞAHİN D., YILMAZ A.
ISPO World Congress 2017, Cape-Town, South Africa, 8 - 11 May 2017

XVII. **Mel-frequency cepstral based heart sound signal segmentation for decision support system**
CELEBİ G., SOZERİ G., YILMAZ A., KATİRCİOGLU D., Okutucu S., SAYİN B. Y., AKSOY H., OTO A.
2017 25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, Turkey, 15 - 18 May 2017, pp.1-4

XVIII. **Dynamic Tests of MR (Magnetorheologic) Damper and Analysis of Response Characteristics in Semi-Active Knee Prosthesis**
Akalin C., ORHANLI T., YILMAZ A., ŞAHİN İ.
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017

XIX. **Application of neural based estimation algorithm for gait phases of above knee prosthesis**
TİLEYLİOĞLU E., YILMAZ A.
2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Milan, Italy, 25 - 29 August 2015

XX. **Embedded Phase Estimation in Finite State Control for Above Knee Prosthesis using Magnetorheological MR Damper**
YILMAZ A., SADEGHİMORAD A., ORHANLI T., ŞAHİN İ.
37th Annual International Conference of theIEEE Engineering in Medicine and Biology Society, Milan, Italy, 25 - 29 August 2015

XXI. **Improving Test Platform for Kinematic Analysis of Above Knee Prostheses**
YILMAZ A., ORHANLI T.
International Society for Prosthetics and Orthotics- ISPO World Congress 2015, Lyon, France, 22 - 25 June 2015, vol.39

XXII. **Application and comparison of finite state control of above knee prosthesis with pneumatic cylinder at different phases**
ORHANLI T., YILMAZ A.
2015 23nd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, Turkey, 16 - 19 May 2015, pp.2234-2237

XXIII. **Application of wireless embedded microcontroller circuit for a semi active above knee prosthesis with pneumatic cylinder**
SARAÇOĞLU M. S., ŞAHİN D., ORHANLI T., YILMAZ A.
2015 23nd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, Turkey, 16 - 19 May 2015, pp.2258-2261

XXIV. **Elektronik Dizüstü Protezleri İçin Yapay Sinir Ağları Tabanlı Yürüyüş Evre Kestirimi Uygulaması**
TİLEYLİOĞLU E., YILMAZ A.
BİYOMUT 2014-Biyomedikal Mühendisliği Ulusal Toplantısı, İstanbul, Turkey, 16 October 2013 - 17 October 2014

XXV. **Analysis of the Performance of Controlled Semi-active Knee Joint With Magnetorheological (MR) Damper**
YILMAZ A., Sadeghimorad A., ŞAHİN İ., Kaya Z. E.
18th National Biomedical Engineering Meeting (BIYOMUT), İstanbul, Turkey, 16 - 17 October 2014

XXVI. **Gait Measurement Using Radial Basis Function Networks and Comparison of Its Performance With Analytical Methods**
AKDOGAN K. E., YILMAZ A.
18th National Biomedical Engineering Meeting (BIYOMUT), İstanbul, Turkey, 16 - 17 October 2014

XXVII. **A Test Platform Design for Testing Knee Prostheses**
YILMAZ A., ORHANLI T.
18th National Biomedical Engineering Meeting (BIYOMUT), İstanbul, Turkey, 16 - 17 October 2014

XXVIII. **Finite State Control of Semi Active Knee Joint With Pneumatic Damper**
ORHANLI T., YILMAZ A.
18th National Biomedical Engineering Meeting (BIYOMUT), İstanbul, Turkey, 16 - 17 October 2014

XXIX. **Home recording for pre-phase sleep apnea diagnosis by Holter recorder using MMC memory**
YILMAZ A., DÜNDAR T.
2010 IEEE International Conference on Virtual Environments, Human-Computer Interfaces and Measurement Systems, Taranto, Italy, 6 - 08 September 2010

XXX. **Prediction of knee angle from accelerometer data for microcontroller implementation of semi active knee prosthesis**
ALTINÖZ Ö. T., YILMAZ A.
2010 15th National Biomedical Engineering Meeting, Antalya, Turkey, Turkey, 21 - 24 April 2010, pp.1-4

XXXI. **Space Weather Activities of IONOLAB Group TEC Mapping**
ARIKAN F., YILMAZ A., ARIKAN O., SAYIN I., GÜRÜN M., AKDOGAN K. E., YILDIRIM S. A.
EGU General Assembly Conference, Viyana, Austria, 19 - 24 April 2009, vol.11, pp.6962-6965

XXXII. **Design Of a Neural Modelling Scheme For Gait Temporal Features**
Can E., YILMAZ A.
IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009, pp.798-801

XXXIII. **Simulations of Knee Angle Control in Dynamical Gait Model for Above Knee Prosthesis**
Akdogan K. E., YILMAZ A., Duman S.
IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009, pp.822-823

XXXIV. **Design of Portable Holter Recorder with MMC Memory for Prephase Sleep Apnea Diagnosis**
Karadeniz O., YILMAZ A., Dundar T.
14th National Biomedical Engineering Meeting, İzmir, Turkey, 20 - 22 May 2009, pp.348-351

XXXV. **Regional ionosphere mapping by using neural networks**
Gueruen M., Akdogan K. E., YILMAZ A.
IEEE 15th Signal Processing and Communications Applications Conference, Eskişehir, Turkey, 11 - 13 June 2007, pp.1027-1028

XXXVI. **A method based on wavelet analysis for the detection of ventricular late potentials in ECG signals**
MOUSA A., YILMAZ A.
Proceedings of the 44th IEEE 2001 Midwest Symposium on Circuits and Systems. MWSCAS 2001 (Cat. No.01CH37257), Dayton, OH, USA, 14 - 17 August 2001

XXXVII. **Neural network detection of ventricular late potentials in ECG signals using wavelet transform extracted parameters**
MOUSA A., YILMAZ A.
2001 Conference Proceedings of the 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, Turkey, Turkey, 25 - 28 November 2001, vol.2, pp.1668-1671

XXXVIII. **Adaptive non linear filtering of ECG signals dynamic neural network approach**
YILMAZ A., ENGLİSH M. J.
IEE Colloquium on Artificial Intelligence Methods for Biomedical Data Processing, London, United Kingdom, 26 April 1996

Supported Projects

SAKA TANATAR B., KUMBAY YILDIZ Ş., ÖZGÜN Ö., AKTAŞ E., YILMAZ A., BULU G., Project Supported by Higher Education Institutions, Elektrik ve Elektronik Mühendisliği Bölümünün ABET Akreditasyonu, 2017 - 2022

YILMAZ A., AKÇAY B., Project Supported by Higher Education Institutions, Elektrik ve Elektronik Mühendisliği Bölümü Bilgisayar Laboratuvarları, 2015 - 2020

YILMAZ A., Kaya Z. E., Project Supported by Higher Education Institutions, Eksik Tahrikli El Protezleri İçin Geliştirilen Doğrusal Olmayan Denetim Yöntemlerinin Gerçek Zamanlı Platformlar Üzerindeki Performanslarının Değerlendirilmesi, 2017 - 2019

AKTAŞ E., YILMAZ A., BULU G., ÖZGÜN Ö., Project Supported by Higher Education Institutions, Elektrik ve Elektronik Mühendisliği Bölümünün ABET Akreditasyonuna Başvurması, 2015 - 2018

YILMAZ A., AKDOĞAN K. E., Project Supported by Higher Education Institutions, ELEKTRONİK DİZ PROTEZİ İÇİN YÜRÜYÜŞ HAREKET DENKLEMLERİNİN ÇÖZÜMLEMESİ VE ORANSAL TÜREVSEL DENETİM UYGULAMASI, 2017 - 2017

YILMAZ A., TUBITAK Project, Elektronik Stetoskop ile Ayrıntılı Dinleme Oskültasyon ve Kalp Hastalıklarında Tanı Destek Sistemi Geliştirme ESDES G, 2015 - 2017

YILMAZ A., Orhanlı T., Project Supported by Higher Education Institutions, Diz Üstü Protezlerinin Kinematik Testleri için Test Platformunun İyileştirilmesi, 2015 - 2016

YILMAZ A., TUBITAK Project, Pnömatik Ve Manyetoreolojik MR Sönümlendiricili Yarı Etkin Diz Eklem Tasarımlarında Gerçek Zamanlı Yürüyüş Fazı Ve Hız Kestirimi Uygulamaları, 2013 - 2016

YILMAZ A., Industrial Thesis Project, UYKU ANALIZI AMAÇLI FLASH KART BELLEKLI HOLTER CIHAZI TASARIMI, 2008 - 2010

YILMAZ A., Industrial Thesis Project, MİKROİŞLEMCİ KONTROLLÜ PROTEZ DİZ EKLEMİ TASARIMI, 2007 - 2010

Metrics

Publication: 54
Citation (WoS): 63
Citation (Scopus): 226
H-Index (WoS): 4
H-Index (Scopus): 5

Non Academic Experience

University of Wisconsin