

## Prof. ATILA YILMAZ

### Personal Information

Office Phone: [+90 312 297 7028](tel:+903122977028)

Fax Phone: [+90 312 299 2125](tel:+903122992125)

Email: [ayilmaz@hacettepe.edu.tr](mailto: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, Biomechanics, Motion Analysis, 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  $\beta$ -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 Hareketinin Kinematik 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**  
Tagdogan 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 Yarı 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., KATİRCİOĞLU 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**  
Akalın 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 the IEEE 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 23rd 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 23rd 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**  
AKDOĞAN 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., ENGLISH 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: 53  
Citation (WoS): 63  
Citation (Scopus): 226  
H-Index (WoS): 4  
H-Index (Scopus): 5

## Non Academic Experience

University of Wisconsin