

Assoc. Prof. ESRA SAATÇI

Personal Information

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International Researcher IDs

ScholarID: Crjm4DwAAAAJ

ORCID: 0000-0002-0044-7780

Publons / Web Of Science ResearcherID: AAG-7756-2019

ScopusID: 36845389900

Yoksis Researcher ID: 112197

Education Information

Doctorate, Istanbul University, Fen Bilimleri Enstitüsü, Biyomedikal Mühendisliği (Dr), Turkey 2005 - 2009

Postgraduate, University of Surrey, Biyomedikal Mühendisliği, England 1994 - 1995

Undergraduate, Istanbul University, Mühendislik Fakültesi, Elektronik Mühendisliği Bölümü, Turkey 1989 - 1993

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, İnvaziv olmayan ventilasyonda solunum parametrelerinin modellenmesi, Istanbul University, Fen Bilimleri Enstitüsü, Biyomedikal Mühendisliği (Dr), 2009

Postgraduate, Labview based controller for compustim l0b surrey stimulator, University of Surrey, Biyomedikal Mühendisliği, 1995

Research Areas

Biosignal Processing, Circuit Theory

Academic Titles / Tasks

Associate Professor, Istanbul Kultur University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2021 - Continues

Assistant Professor, Istanbul Kultur University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2009 - 2021

Assistant Professor, Istanbul Kultur University, Meslek Yüksekokulu, Uçuş Harekat Yöneticiliği, 2018 - 2019

Research Assistant, Istanbul Kultur University, Mühendislik Fakültesi, Elektronik Mühendisliği, 2004 - 2009

Academic and Administrative Experience

Education and Curriculum Board Member, Istanbul Kultur University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2024 - Continues

Faculty Board Member, Istanbul Kultur University, Mühendislik Fakültesi, 2019 - Continues

Faculty Management Board Member, Istanbul Kultur University, Mühendislik Fakültesi, 2019 - Continues

Head of Department, Istanbul Kultur University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2019 - Continues

Assistant Director of the Institute, Istanbul Kultur University, Lisansüstü Eğitim Enstitüsü, 2019 - 2020

Deputy Head of Department, Istanbul Kultur University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2009 - 2013

Research Assistant Faculty Representative, University of London-Kings College London, Engineering, Mechanical Engineering, 2001 - 2003

Courses

INTRODUCTION TO RANDOM SIGNALS, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019

ELECTRICAL MEASUREMENT, Undergraduate, 2022 - 2023, 2021 - 2022, 2019 - 2020, 2018 - 2019

BIOMEDICAL INSTRUMENTATION, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019

DIGITAL SIGNAL PROCESSING, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

OPTİMİZASYONA GİRİŞ, Postgraduate, 2021 - 2022, 2020 - 2021

SIGNALS AND SYSTEMS, Undergraduate, 2021 - 2022

SIGNALS AND SYSTEMS FOR COMPUTER ENGINEERS, Undergraduate, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015

INTRODUCTION TO RANDOM SIGNALS, Undergraduate, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2012 - 2013

ELECTRICAL MEASUREMENT, Undergraduate, 2017 - 2018, 2016 - 2017, 2015 - 2016

BIOMEDICAL INSTRUMENTATION, Undergraduate, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2011 - 2012, 2010 - 2011

DIGITAL SIGNAL PROCESSING, Undergraduate, 2014 - 2015, 2013 - 2014, 2011 - 2012, 2010 - 2011, 2009 - 2010

ADAPTIVE FILTERS, Undergraduate, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2011 - 2012

ELECTRICAL MEASUREMENT, Undergraduate, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2011 - 2012, 2010 - 2011, 2009 - 2010

INTRODUCTION TO ELECTRONIC ENGINEERING, Undergraduate, 2011 - 2012, 2010 - 2011, 2009 - 2010

Supervised Theses

ESRA S., Polisomnografi sinyallerinin işlenmesi ile uyku apnesinin otomatik teşhisi, Postgraduate, G.KARAMUSTAFAOĞLU(Student), 2014

ESRA S., Solunum sisteminin zorlanmış osilasyon tekniği ile modellenmesi, Postgraduate, G.ÇELİK(Student), 2013

Published journal articles indexed by SCI, SSCI, and AHCI

- Determination of Respiratory Parameters by Means of Hurst Exponents of the Respiratory Sounds and Stochastic Processing Methods**

Saatçi E., Saatçi E.

IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol.68, no.12, pp.3582-3592, 2021 (SCI-Expanded)

- II. **State-space analysis of fractional-order respiratory system models**
SAATÇI E., SAATÇI E.
BIOMEDICAL SIGNAL PROCESSING AND CONTROL, vol.57, 2020 (SCI-Expanded)
- III. **Period Determination in Cyclo-Stationary Signals by Autocorrelation and Ramanujan Subspaces**
Saatçı E., Saatçı E.
IEEE SIGNAL PROCESSING LETTERS, vol.27, pp.266-270, 2020 (SCI-Expanded)
- IV. **Analysis of linear lung models based on state-space models**
SAATÇI E., SAATÇI E., Akan A.
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol.183, 2020 (SCI-Expanded)
- V. **Determination of the minimum sampling frequency in bandpass sampling by geometric approach and geometric programming**
SAATÇI E., SAATÇI E.
SIGNAL IMAGE AND VIDEO PROCESSING, vol.12, no.7, pp.1319-1327, 2018 (SCI-Expanded)
- VI. **Correlation analysis of respiratory signals by using parallel coordinate plots**
SAATÇI E.
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol.153, pp.41-51, 2018 (SCI-Expanded)
- VII. **Posterior Cramer-Rao Lower Bounds for dual Kalman estimation**
SAATÇI E., Akan A.
DIGITAL SIGNAL PROCESSING, vol.22, no.1, pp.47-53, 2012 (SCI-Expanded)
- VIII. **Inverse Modeling of Respiratory System during Noninvasive Ventilation by Maximum Likelihood Estimation**
SAATÇI E., Akan A.
EURASIP JOURNAL ON ADVANCES IN SIGNAL PROCESSING, vol.2010, 2010 (SCI-Expanded)
- IX. **Respiratory parameter estimation in non-invasive ventilation based on generalized Gaussian noise models**
SAATÇI E., Akan A.
SIGNAL PROCESSING, vol.90, no.2, pp.480-489, 2010 (SCI-Expanded)

Articles Published in Other Journals

- I. **Multifractal Behaviour of Respiratory Signals**
SAATÇI E., SAATÇI E.
ELECTRICA, vol.20, no.2, pp.182-188, 2020 (ESCI)
- II. **HEART SOUND LOCALIZATION AND REDUCTION IN TRACHEAL SOUNDS BY GABOR TIME-FREQUENCY MASKING**
SAATÇI E., Akan A.
ISTANBUL UNIVERSITY-JOURNAL OF ELECTRICAL AND ELECTRONICS ENGINEERING, vol.17, no.1, pp.3233-3238, 2017 (ESCI)

Books

- I. **Dual Unscented Kalman Filter and Its Applications to Respiratory System Modelling**
SAATÇI E., AKAN A.
in: Kalman Filter Recent Advances and Applications, Moreno, Victor M., Editor, IntechOpen, pp.205-228, 2009

Refereed Congress / Symposium Publications in Proceedings

- I. **Multifractality Analysis of Respiratory Signals**
SAATÇI E., SAATÇI E.
28th Signal Processing and Communications Applications Conference (SIU), ELECTR NETWORK, 5 - 07 October 2020
- II. **State-Space Analysis of the Linear Respiratory System Models**
SAATÇI E., SAATÇI E., AKAN A.
2019 27th Signal Processing and Communication Applications Conference (SIU-2019), Sivas, Turkey, 24 - 26 April 2019, vol.1, pp.1-4
- III. **Cyclostationary Analysis of Respiratory Signals with Application of Rate Determination**
SAATÇI E., SAATÇI E., AKAN A.
IUPESM World Congress on Medical Physics and Biomedical Engineering, Prague, Czech Republic, 3 - 08 June 2018, pp.265-269
- IV. **Döngüsel Durağan Sinyallerde Ramanujan Altuzayları Aracılığıyla Çoklu Periyot Tespiti**
SAATÇI E., SAATÇI E.
26th IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Turkey, 2 - 05 May 2018
- V. **Multiple Period Determination in Cyclo-Stationary Signals by means of Ramanujan Subspaces**
SAATÇI E., SAATÇI E.
26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
- VI. **Çok Bantlı Sinyallerin Band Geçiren Örneklenmesine Geometrik Yaklaşım**
SAATÇI E., SAATÇI E., AKAN A.
25th IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Antalya, Turkey, 15 - 18 May 2017, vol.2017, pp.1-4
- VII. **Bandpass Sampling of Multiband Signals by using Geometric Approach**
SAATÇI E., SAATÇI E., AKAN A.
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- VIII. **Polisomnografi Sinyallerinin İşlenmesi ile Uyku Apnesinin Otomatik Teşhisi**
Karamustafaoğlu G., AKAN A., SAATÇI E.
19th IEEE Sinyal Tıp Teknolojileri Ulusal Kongresi, Kapadokya, Turkey, 25 - 27 September 2014
- IX. **Cross-Correlation Analysis of Flow and Temperature Signals in Forced Oscillation Technique**
Çiçekdağı İ., Çelik G., SAATÇI E., AKAN A.
34th Annual International Conference of the IEEE EMBS, California, United States Of America, 28 August - 01 September 2012
- X. **Zorlu Osilasyon tekniği ile Akciğer Empedansı Ölçümü**
ÇELİK G., SAATÇI E., AKAN A.
19th IEEE Sinyal Tıp Teknolojileri Ulusal Kongresi, 16. Biyomedikal Mühendisliği Ulusal Toplantısı BİYOMUT2011, Antalya, Turkey, 13 - 16 October 2011, pp.434-437
- XI. **Solunum Sistemi Model Parametrelerinin Kestirimi**
SERT G., SAATÇI E., AKAN A.
19th IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Antalya, Turkey, 20 - 22 April 2011, pp.590-593
- XII. **ESTIMATION OF THE RESPIRATORY SYSTEM PARAMETERS**
Sert G., SAATÇI E., GÜRKAN G., AKAN A.
19th European Signal Processing Conference (EUSIPCO), Barcelona, Spain, 29 August - 02 September 2011, pp.1569-1572
- XIII. **Posterior cramer Rao lower bounds for the respiratory model parameter estimation**
SAATÇI E., AKAN A.
17th European Signal Processing Conference, EUSIPCO 2009, Glasgow, England, 24 - 28 August 2009, pp.2327-2331
- XIV. **Solunum Parametrelerinin Kestiriminde Genelleştirilmiş Gauss Dağılımlı Hata Modeli**
SAATÇI E., AKAN A.
17th IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Antalya, Turkey, 9 - 12 April 2009, pp.141-144
- XV. **Dual Kalman Filter based State-Parameter Estimation in Linear Lung Models**
SAATÇI E., AKAN A.

4th European Conference of the International Federation for Medical and Biological Engineering (ECIFMBE),
Antwerp, Belgium, 23 - 27 November 2008, pp.272-275

XVI. Generalized Gauss Distribution Noise Model for Respiratory Parameter Estimation

SAATÇI E., Akan A.

IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009,
pp.403-404

XVII. RESPIRATORY PARAMETER ESTIMATION IN LINEAR LUNG MODELS

SAATÇI E., Akan A.

30th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, Vancouver,
Canada, 20 - 24 August 2008, pp.307-308

XVIII. A study on the state estimation of nonlinear electric circuits by unscented Kalman filter

SAATÇI E., AKAN A.

5th International Conference of Electrical and Electronics Engineering, Bursa, Turkey, 2 - 05 December 2007

XIX. Lung model parameter estimation by unscented Kalman filter

SAATÇI E., Akan A.

29th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, Lyon, France, 22 -
26 August 2007, pp.2556-2557

XX. Lung Sound Noise Reduction Using Gabor Time-Frequency Masking

SAATÇI E., Akan A.

World Congress on Medical Physics and Biomedical Engineering, Seoul, South Korea, 27 August - 01 September
2006, pp.971-972

XXI. Heart sound reduction in lung sound by spectrogram

SAATÇI E., AKAN A.

3rd European Medical and Biological Engineering Conference, Prague, Czech Republic, 20 - 25 November 2005,
pp.20

Memberships / Tasks in Scientific Organizations

Biyomedikal ve Klinik Mühendisliği Derneği, Chairman of the Board, 2023 - Continues, Turkey

Biomedical Image and Signal Analytics Technical Area Committee of EURASIP, Member, 2023 - Continues, Germany

Scientific Refereeing

SIGNAL, IMAGE AND VIDEO PROCESSING, Journal Indexed in SCI-E, September 2023

IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, Journal Indexed in SSCI, July 2023

MECHANISM AND MACHINE THEORY, Journal Indexed in SCI-E, July 2023

Metrics

Publication: 33

Citation (WoS): 46

Citation (Scopus): 72

H-Index (WoS): 5

H-Index (Scopus): 5

Non Academic Experience

Professional Association, National Blood Service London and South East Zone, Production, Production Assistance

Company, AMS Tibbi Cihaz İmalat İthalat İhracat Ltd. Sti., Sales, Sales Administrator

Company, SIEMENS Simko Ticaret ve Sanayi A.S., Sales, Regional Sales Administrator in Medical Engineering

Company, BİNAŞ Binbay Hastane Donatimi Sanayi ve Ticaret A.S., Technical Service, Technical Service Manager