

## Prof. GÜLAY TOHUMOĞLU

### Personal Information

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### International Researcher IDs

ScholarID: oty2I2sAAAJ

ORCID: 0000-0003-2292-2148

Publons / Web Of Science ResearcherID: O-9718-2019

ScopusID: 6602312581

Yoksis Researcher ID: 8187

### Education Information

Doctorate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Gaziantep Elektrik-Elektronik Mühendisliği (Dr), Turkey 1986 - 1993

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Gaziantep Elektrik-Elektronik Mühendisliği (YI) (Tezli), Turkey 1983 - 1986

Undergraduate, Middle East Technical University, Gaziantep Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Pr., Turkey 1978 - 1983

### Foreign Languages

Spanish, A1 Beginner

### Certificates, Courses and Trainings

Personal Evolution, Deprem 3-Deprem 4, Uzaktan Eğitim Kapısı, 2023

Personal Evolution, Deprem 1-Deprem 2, Uzaktan Eğitim Kapısı, 2023

Human Rights, Çalışma Ahlakı, Uzaktan Eğitim Kapısı, 2023

Environment and Sustainability, Deniz Okuryazarlığı Programı, Dokuz Eylül Üniversitesi Sürekli Eğitim Merkezi, 2023

### Dissertations

Doctorate, Computation of steady-state responses of periodically excited nonlinear systems by extended spectral analysis method, Middle East Technical University, Fen Bilimleri Enstitüsü, Gaziantep Elektrik-Elektronik Mühendisliği (Dr), 1993

Postgraduate, Spectral analysis technique for periodically time varying linear systems, Middle East Technical University, Fen Bilimleri Enstitüsü, Gaziantep Elektrik-Elektronik Mühendisliği (YI) (Tezli), 1986

### Research Areas

Biosignal Processing, Electrical and Electronics Engineering, Circuit Theory, Electronic Circuits, Passive Circuit

## Academic Titles / Tasks

Professor, Dokuz Eylul University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği Bölümü, 2010 - Continues  
Professor, Gaziantep University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering (English), 2007 - 2010  
Associate Professor, Gaziantep University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering (English), 2000 - 2007  
Assistant Professor, Gaziantep University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering (English), 1993 - 2000  
Lecturer, Gaziantep University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering (English), 1987 - 1993  
Research Assistant, Middle East Technical University, Faculty Of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 1983 - 1987

## Academic and Administrative Experience

Head of Department, Dokuz Eylul University, Fen Bilimleri Enstitüsü, 2020 - 2023  
Head of Department, Dokuz Eylul University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği Bölümü, 2011 - 2014  
Fakülte Kurulu Üyesi, Dokuz Eylul University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği Bölümü, 2010 - 2013  
Head of Department, Dokuz Eylul University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği Bölümü, 2010 - 2013  
Erasmus Coordinator, Gaziantep University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering (English), 2007 - 2010  
Head of Department, Gaziantep University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering (English), 2004 - 2009  
Deputy Head of Department, Gaziantep University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering (English), 1993 - 1996

## Courses

Laboratory II, Undergraduate, 2023 - 2024  
Circuit Theory I, Undergraduate, 2022 - 2023  
Circuit Theory II, Undergraduate, 2023 - 2024, 2022 - 2023  
Signals and Systems for Biomedical Technologies, Postgraduate, 2022 - 2023  
Research, Undergraduate, 2022 - 2023  
Linear Systems Theory I, Postgraduate, 2022 - 2023  
Circuit Theory II, Undergraduate, 2022 - 2023  
Laboratory I, Undergraduate, 2022 - 2023  
Laboratory II, Undergraduate, 2022 - 2023  
Network Synthesis, Undergraduate, 2020 - 2021  
EED 4894 Graduation Project, Undergraduate, 2019 - 2020  
EED4793 Research Project, Undergraduate, 2019 - 2020  
EEE5503 Linear System Theory I, Postgraduate, 2019 - 2020  
EED 2402 Circuit Theory II, Undergraduate, 2019 - 2020, 2015 - 2016

FINAL YEAR PROJECT, Undergraduate, 2018 - 2019, 2015 - 2016  
M.SC. THESIS, Postgraduate, 2018 - 2019, 2015 - 2016  
PH D THESIS, Doctorate, 2018 - 2019, 2015 - 2016  
M.SC. RESEARCH, Postgraduate, 2018 - 2019, 2015 - 2016  
EED2301 CİRCUİT THEORY I, Undergraduate, 2018 - 2019  
PH D RESEARCH, Doctorate, 2018 - 2019, 2015 - 2016  
Biomedical Electronics, Postgraduate, 2015 - 2016

## Advising Theses

Tohumoğlu G., Daubechies dalgacıkları kullanılarak EEG sinyallerinden epileptik nöbetlerin belirlenmesi, Postgraduate, Ş.YOL(Student), 2022  
TOHUMOĞLU G., Katar uzunluğu, zincir kod ve EZW kodlamaları tabanlı tıbbi görüntü sıkıştırma yaklaşımları, Doctorate, E.ALDEMİR(Student), 2019  
TOHUMOĞLU G., Engelliler için ses ve mimik kumandalı TV kontrol sistemi tasarımı ve gerçeklemesi, Postgraduate, H.ALTKİLİT(Student), 2016  
TOHUMOĞLU G., Design of analog circuits via soft computing methods, Doctorate, H.KARCI(Student), 2015  
TOHUMOĞLU G., Novel clustering methods for neurofuzzy systems design, Doctorate, Y.TORUN(Student), 2010  
TOHUMOĞLU G., Wavelet based tumor detection and its application on mammograms, Postgraduate, B.TÜYSÜZ(Student), 2007  
TOHUMOĞLU G., Identification of asynchronous machines, Postgraduate, İ.ARIKAN(Student), 2006  
TOHUMOĞLU G., Sliding mode control and its applications, Postgraduate, Ş.AKINAL(Student), 2005  
TOHUMOĞLU G., Analysis of linear time-varying systems in wavelet domain, Postgraduate, H.KARCI(Student), 2005  
TOHUMOĞLU G., Modification of shapiro's embedded zerotree wavelet (EZW) algorithm to apply for ECG signal compression, Postgraduate, K.ERBİL(Student), 2002  
TOHUMOĞLU G., Adaptation of the spectral analysis method to the periodically time-varying linear discrete systems, Postgraduate, S.ÖZALICI(Student), 1997

## Jury Memberships

Associate Professor Exam, Associate Professor Exam, Dokuz Eylül University, October, 2023  
Post Graduate, Post Graduate, Dokuz Eylül Üniversitesi, September, 2022

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Reversible 3D compression of segmented medical volumes: usability analysis for teleradiology and storage**  
Aldemir E., GEZER N. S., TOHUMOĞLU G., Baris M. M., Kavur A. E., DİCLE O., SELVER M. A.  
MEDICAL PHYSICS, vol.47, no.4, pp.1727-1737, 2020 (SCI-Expanded)
- II. **Binary medical image compression using the volumetric run-length approach**  
Aldemir E., TOHUMOĞLU G., SELVER M. A.  
IMAGING SCIENCE JOURNAL, vol.67, no.3, pp.123-135, 2019 (SCI-Expanded)
- III. **Speciation-based genetic algorithm in analog circuit design**  
Karci H., TOHUMOĞLU G., NACAROĞLU A.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.24, no.3, pp.1022-1033, 2016 (SCI-Expanded)
- IV. **Designing simulated annealing and subtractive clustering based fuzzy classifier**  
TORUN Y., Tohumoglu G.

APPLIED SOFT COMPUTING, vol.11, no.2, pp.2193-2201, 2011 (SCI-Expanded)

**V. Linear time-varying systems analysis in wavelet domain**

Karci H., Tohumoglu G.

ELECTRICAL ENGINEERING, vol.89, no.8, pp.653-658, 2007 (SCI-Expanded)

**VI. Formulation of ELF magnetic fields' effects on malondialdehyde level and myeloperoxidase activity in kidney using genetic programming**

Tohumoglu G., Canseven A. G., Cevik A., Seyhan N.

COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol.86, no.1, pp.1-9, 2007 (SCI-Expanded)

**VII. ECG signal compression by multi-iteration EZW coding for different wavelets and thresholds**

Tohumoglu G., Sezgin K. E.

COMPUTERS IN BIOLOGY AND MEDICINE, vol.37, no.2, pp.173-182, 2007 (SCI-Expanded)

**VIII. Multi-iteration wavelet zero-tree coding for image compression**

Losada M., Tohumoglu G., Fraile D., Artes A.

SIGNAL PROCESSING, vol.80, no.7, pp.1281-1287, 2000 (SCI-Expanded)

**IX. Effects of parasitic elements in operational transconductance amplifier AM modulator**

Nacaroglu A., Tohumoglu G.

JOURNAL OF THE FRANKLIN INSTITUTE-ENGINEERING AND APPLIED MATHEMATICS, vol.334B, no.4, pp.507-514, 1997 (SCI-Expanded)

**X. Steady state analysis of periodically time-varying networks by new developments in the spectral domain**

Tohumoglu G., Koksall M.

INTERNATIONAL JOURNAL OF CIRCUIT THEORY AND APPLICATIONS, vol.24, no.4, pp.519-528, 1996 (SCI-Expanded)

## Articles Published in Other Journals

**I. The relationship between general motivation and situation- specific attitudes and beliefs related to learning English for academic purposes: It's impact on academic success**

UÇKUN B., TOHUMOĞLU G., Utar S.

Gaziantep Üniversitesi Sosyal Bilimler Dergisi, vol.10, no.1, pp.547-569, 2011 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

**I. A Short Tutorial: From Neuroscience to Detection of Pseudo Epileptic Seizure**

TOHUMOĞLU G., YOL Ş.

TIPTEKNO'21 MEDICAL TECHNOLOGIES CONGRESS, Antalya, Turkey, 04 November 2021, pp.176-179

**II. Detection Methods of Pseudo and Epileptic Seizures from EEG signals: A Short Review**

Yol S., TOHUMOĞLU G.

2020 Medical Technologies Congress (TIPTEKNO), ELECTR NETWORK, 19 - 20 November 2020

**III. Denoising Baseline Signal of Electrocardiogram using Separable Wavelets Bases**

Aldemir E., TOHUMOĞLU G.

Medical Technologies Congress (TIPTEKNO), İzmir, Turkey, 3 - 05 October 2019, pp.505-508

**IV. Performance Evaluation of Lossless Compression Algorithms for Medical Images**

Aldemir E., TOHUMOĞLU G., SELVER M. A.

27th Signal Processing and Communications Applications Conference (SIU), Sivas, Turkey, 24 - 26 April 2019

**V. Lossless Compression of Segmented 3D Binary Data for Efficient Telemedicine Applications**

ALDEMİR E., TOHUMOĞLU G., DİCLE O., SELVER M. A.

RSNA, 25 - 30 November 2018

**VI. Improvement of Entropy Coding Performance for Medical Images using 3D Predictors**

Aldemir E., TOHUMOĞLU G., DİCLE O., SELVER M. A.

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

**VII. Quasi Resonant Flyback Topology Based LCD TV Power Supply Board Design and Power Loss Analysis**

Sahin Y., TOHUMOĞLU G.

2nd European Conference on Electrical Engineering and Computer Science (EECS), Bern, Switzerland, 20 - 22 December 2018, pp.16-20

**VIII. Improvement of the Band Detection performance of DNA Gel Images Using A Nonlinear Preprocessing Operation**

ALDEMİR E., ŞEN E., YAĞCI T., TOHUMOĞLU G.

International Conference on Technology, Engineering and Science (ICONTESS), 26 - 29 October 2017

**IX. Comparison of Run Length Encoding Based Compression of Binary CT Images for Efficient Transmission of Segmented Data**

ALDEMİR E., TOHUMOĞLU G., DİCLE O., SELVER M. A.

X. ULUSLARARASI KATILIMLI TIP BİLİŞİMİ KONGRESİ, Antalya, Turkey, 12 - 15 October 2017

**X. THE TRADITIONAL HISTORY BEHIND THE FOODS AROUND GAZİANTEP TURKEY A CASE OF ÇEYİZ ALMA TAKING TROUSSEAU TRADITION AND TO SERVE PATLICAN DOĞRAMA CUT UP AUBERGINE TOHUMOĞLU G.**

Uluslararası Gastronomi Turizmi Kongresi, İzmir, Turkey, 8 - 10 December 2016

**XI. Denoising of 3D Medical Imaging Using Sparse Decomposition**

ALDEMİR E., TOHUMOĞLU G.

8th International Conference on Image Processing, Wavelet and Applications, 22 - 24 September 2016

**XII. The possible role of bioinformatics for Ph.D. education in biochemistry.**

ÇAVAŞ L., ALYÜRÜK H., TOHUMOĞLU G.

6th ORPHEUS Conference, 6 - 07 May 2011

**XIII. A New Fuzzy Classifier Based on Simulated Annealing and Subtractive Clustering**

TORUN Y., Tohumoglu G.

IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009, pp.694-697

**XIV. Formulation of low intensity direct current effects on wound healing of skin using genetic programming**

Canseven A. G., Tohumoglu G., Cevik A., Seyhan N.

15th International Conference on Digital Signal Processing, Cardiff, United Kingdom, 1 - 04 July 2007, pp.507-508

## **Memberships / Tasks in Scientific Organizations**

Elektrik Mühendisleri Odası, Member of Advisory Board, 1983 - Continues, Turkey

## **Scientific Refereeing**

ELECO 2023, Conference Paper (Full Text), October 2023

Project Supported by Higher Education Institutions, BAP Research Project, Hacettepe University, Turkey, October 2023

Project Supported by Higher Education Institutions, BAP Research Project, Dokuz Eylul University, Turkey, March 2023

Research Project of the Presidency of Turkey Health Institutes (TÜSEB), Dokuz Eylul University, Turkey, January 2023

Research Project of the Presidency of Turkey Health Institutes (TÜSEB), Dokuz Eylul University, Turkey, November 2022

Research Project of the Presidency of Turkey Health Institutes (TÜSEB), Dokuz Eylul University, Turkey, November 2022

Project Supported by Higher Education Institutions, BAP Research Project, Karadeniz Technical University, Turkey, May 2022

Project Supported by Higher Education Institutions, BAP Research Project, Hacettepe University, Turkey, March 2022

## Tasks In Event Organizations

Tohumoğlu G., ELEKTRİK-ELEKTRONİK ve BİYOMEDİKAL MÜHENDİSLİĞİ KONFERANSI, Scientific Congress, Bursa, Turkey, Kasım 2022

Tohumoğlu G., TIPTEKNO MEDICAL TEKNOLOGIES CONGRESS, Scientific Congress, Antalya, Turkey, Kasım 2022

Tohumoğlu G., TIPTEKNO MEDICAL TEKNOLOGIES CONGRESS, Scientific Congress, Antalya, Turkey, Kasım 2021

## Metrics

Publication: 26

Citation (WoS): 102

Citation (Scopus): 137

H-Index (WoS): 5

H-Index (Scopus): 6

## Artistic Activity

TOHUMOĞLU G., 1. Kişisel Karma Resim Sergisi, March 2019