

Prof. TOLGA ÇİLOĞLU

Personal Information

Email: ciltolga@metu.edu.tr

Education Information

Doctorate, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, Turkey
1987 - 1994

Post Graduate, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, Turkey
1985 - 1987

Under Graduate, Middle East Technical University, Odtu Kuzey Kıbrıs Kampusu (Kkktc-Güzelyurt), Elektrik-Elektronik Mühendisliği Bölümü, Turkey 1981 - 1985

Foreign Languages

English, C1 Advanced

Research Areas

Electrical and Electronics Engineering

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2011 -
Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü,
2009 - 2011

Assistant Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü,
1996 - 2009

Lecturer, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 1989 - 1996

Research Assistant, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü,
1987 - 1989

Professional Experience

Head of Department, Middle East Technical University, Faculty Of Engineering, Elektrik-Elektronik Mühendisliği Bölümü,
2016 - 2019

Deputy Head of Department, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği
Bölümü, 2015 - 2016

Courses

Advising Theses

- Çiloğlu T., REDUCING COMPUTATIONAL DEMAND OF MULTI-STATE CONSTRAINT KALMAN FILTER IN VISUAL-INERTIAL ODOMETRY APPLICATIONS, Post Graduate, K.Eyice(Student), 2019
- ÇİLOĞLU T., Two stage blind dereverberation based on stochastic models of speech and reverberation, Post Graduate, M.KAVRUK(Student), 2019
- ÇİLOĞLU T., Derivative based proportionate type adaptive filtering over sparse echo channels, Post Graduate, M.BABEK(Student), 2018
- ÇİLOĞLU T., Digital modelling of guitar audio effects, Post Graduate, E.ZEKİ(Student), 2015
- ÇİLOĞLU T., Sea surface motion induced effects on high frequency underwater acoustic signals, Post Graduate, H.GÜNEŞ(Student), 2014
- YILMAZ A. Ö. , ÇİLOĞLU T., Implementation of an underwater acoustic FSK system and investigation of the effects of surface reflections, Post Graduate, O.ŞENTÜRK(Student), 2014
- ÇİLOĞLU T., Two channel adaptive speech enhancement, Post Graduate, E.ZAİM(Student), 2014
- ÇİLOĞLU T., Nonlinear interactive source-filter model for voiced speech, Doctorate, T.KOÇ(Student), 2012
- ÇİLOĞLU T., CANDAN Ç., MEMS sensor based underwater AHRS (Attitude and Heading Reference System) aided by compass and pressure sensor, Post Graduate, M.ERÇİN(Student), 2012
- ÇİLOĞLU T., SERİNAĞAOĞLU DOĞRUSÖZ Y., Detection of post apnea sounds and apnea periods from sleep sounds, Post Graduate, E.KARCI(Student), 2011
- ÇİLOĞLU T., CANDAN Ç., A sequential classification algorithm for autoregressive processes, Post Graduate, G.OTLU(Student), 2011
- ÇİLOĞLU T., CANDAN Ç., Speech enhancement utilizing phase continuity between consecutive analysis windows, Post Graduate, E.MEHMETCİK(Student), 2011
- ÇİLOĞLU T., Underwater channel modeling for sonar applications, Post Graduate, E.EPÇAÇAN(Student), 2011
- ÇİLOĞLU T., Audio event detection on tv broadcast, Post Graduate, E.CAN(Student), 2011
- ÇİLOĞLU T., ALATAN A. A. , Rotation, scale and rotation invariant automatic target recognition using template matching for satellite imagery, Post Graduate, A.ERTÜRK(Student), 2010
- ÇİLOĞLU T., Bimodal automatic speech segmentation and boundary refinement techniques, Doctorate, E.AKDEMİR(Student), 2010
- ÇİLOĞLU T., CANDAN Ç., CFAR processing with multiple exponential smoothers for nonhomogeneous environments, Post Graduate, B.GÜRAKAN(Student), 2010
- ÇİLOĞLU T., A comparative analysis of matched field processors for underwater acoustic source localization, Post Graduate, T.BAHADIR(Student), 2010
- ÇİLOĞLU T., Multiple window detectors, Post Graduate, O.SİPAHİGİL(Student), 2010
- ÇİLOĞLU T., Design and implementation of a fixed point digital active noise controller headphone, Post Graduate, F.ERKAN(Student), 2009
- ÇİLOĞLU T., Investigation of the significance of periodicity information in speaker identification, Post Graduate, S.GÜRSOY(Student), 2008
- ÇİLOĞLU T., A study on language modeling for Turkish large vocabulary continuous speech recognition, Post Graduate, A.ORKAN(Student), 2005
- ÇİLOĞLU T., Modeling phoneme durations and fundamental frequency contours in Turkish speech, Doctorate, Ö.ÖZTÜRK(Student), 2005
- ÇİLOĞLU T., The implementation complexity of finite impulse response digital filters under different coefficient quantization schemes and realization structures, Post Graduate, S.AKYÜREK(Student), 2004
- ÇİLOĞLU T., Design and implementation of a DSP based active noise controller for headsets, Post Graduate, A.TOKATLI(Student), 2004
- ÇİLOĞLU T., Language modeling for Turkish continuous speech recognition, Post Graduate, S.ŞAHİN(Student), 2003
- ÇİLOĞLU T., Large vocabulary continuous speech recognition for Turkish using HTK, Post Graduate, M.ALİ(Student),

2003

ÇİLOĞLU T., Implementation of a multiple input multiple output active noise control system, Post Graduate, F.BAŞÇI(Student), 2002

ÇİLOĞLU T., Automatic transcription of monophonic music, Post Graduate, S.ASLI(Student), 2002

ÇİLOĞLU T., A Dialogue design tool implementation for spoken dialogue systems, Post Graduate, H.ERDOĞAN(Student), 2001

ÇİLOĞLU T., Active noise control: Applications on a headset and a ouct, Post Graduate, E.GÜNER(Student), 2000

ÇİLOĞLU T., Single channel noisy speech enhancement based on spectral amplitude estimation methods, Post Graduate, C.DEMİRKIR(Student), 2000

ÇİLOĞLU T., Enhancement of noisy speech utilizing the Kalman filter, Post Graduate, M.DEVİREN(Student), 2000

ÇİLOĞLU T., Speech enhancement by subspace methods, Post Graduate, L.SAYAR(Student), 2000

ÇİLOĞLU T., Mutual coupling compensation in linear and planar array antennas, Post Graduate, Ş.TUNCER(Student), 1999

ÇİLOĞLU T., Digital watermarking algorithms for audio and speech signals, Post Graduate, S.UTKU(Student), 1999

ÇİLOĞLU T., Fast implementation of cosine-modulated filter banks and the design of prototype filters, Post Graduate, K.BÜYÜKATAK(Student), 1999

ÇİLOĞLU T., LMS and FXLMS algorithms applied to narrowband active noise cancelling applications, Post Graduate, A.TÜRKAY(Student), 1999

ÇİLOĞLU T., Code excited linear predictive coding of speech wing source-filter interrelation extracted by self organising maps, Post Graduate, G.AVKAROĞULLARI(Student), 1998

ÇİLOĞLU T., Denoising of degraded audio signals using wavelet analysis, Post Graduate, E.BARIŞ(Student), 1998

Jury Memberships

Appointment Academic Staff, Appointment Academic Staff, Orta Doğu Teknik Üniversitesi, December, 2018

Appointment Academic Staff, Appointment Academic Staff, Orta Doğu Teknik Üniversitesi, December, 2018

Appointment Academic Staff, Appointment Academic Staff, Orta Doğu Teknik Üniversitesi, October, 2018

Appointment Academic Staff, Appointment Academic Staff, Orta Doğu Teknik Üniversitesi, August, 2018

Appointment Academic Staff, Appointment Academic Staff, Orta Doğu Teknik Üniversitesi, May, 2018

Appointment Academic Staff, Appointment Academic Staff, Orta Doğu Teknik Üniversitesi, February, 2018

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- **A Space-Time Coded Mills Cross MIMO Architecture to Improve DOA Estimation and Its Performance Evaluation by Field Experiments**
Ungan C. U. , CANDAN Ç., ÇİLOĞLU T.
IEEE TRANSACTIONS ON AEROSPACE AND ELECTRONIC SYSTEMS, vol.56, pp.1807-1818, 2020 (Journal Indexed in SCI)
- **A Hybrid Nonlinear Method for Array Thinning**
Epcacan E., ÇİLOĞLU T.
IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION, vol.66, pp.2318-2325, 2018 (Journal Indexed in SCI)
- **Nonlinear interactive source-filter models for speech**
KOÇ T., ÇİLOĞLU T.
COMPUTER SPEECH AND LANGUAGE, vol.36, pp.365-394, 2016 (Journal Indexed in SCI)
- **Multimodal concept detection in broadcast media: KavTan**
SOYSAL M., Logoglu K. B. , TEKİN M., ESEN E., SARACOĞLU A., Acar B. O. , Ozan E. C. , Ates T. K. , SEVİMLİ H., SEVİNÇ M., et al.
MULTIMEDIA TOOLS AND APPLICATIONS, vol.72, pp.2787-2832, 2014 (Journal Indexed in SCI)
- **Comments on "Detection of signals of unknown duration by multiple energy detectors"**

SİPAHİGİL O., ÇİLOĞLU T.

SIGNAL PROCESSING, vol.94, pp.128-129, 2014 (Journal Indexed in SCI)

● **Automatic Segmentation of High Speed Video Images of Vocal Folds**

KOÇ T., ÇİLOĞLU T.

● JOURNAL OF APPLIED MATHEMATICS, 2014 (Journal Indexed in SCI)

● **CFAR processing with switching exponential smoothers for nonhomogeneous environments**

GURAKAN B., CANDAN Ç., ÇİLOĞLU T.

● DIGITAL SIGNAL PROCESSING, vol.22, pp.407-416, 2012 (Journal Indexed in SCI)

● **Bimodal automatic speech segmentation based on audio and visual information fusion**

Akdemir E., ÇİLOĞLU T.

● SPEECH COMMUNICATION, vol.53, pp.889-902, 2011 (Journal Indexed in SCI)

● **HMM topology for boundary refinement in automatic speech segmentation**

Akdemir E., ÇİLOĞLU T.

● ELECTRONICS LETTERS, vol.46, pp.1086-1087, 2010 (Journal Indexed in SCI)

● **Investigation of sequential properties of snoring episodes for obstructive sleep apnoea identification**

ÇAVUŞOĞLU M., ÇİLOĞLU T., Serinagaoglu Y., Kamaşak M. E., EROĞUL O., AKÇAM T.

● PHYSIOLOGICAL MEASUREMENT, vol.29, pp.879-898, 2008 (Journal Indexed in SCI)

● **The use of articulator motion information in automatic speech segmentation**

Akdemir E., ÇİLOĞLU T.

● SPEECH COMMUNICATION, vol.50, pp.594-604, 2008 (Journal Indexed in SCI)

● **A case study on the ELF characterization of the Earth-ionosphere cavity: Forecasting the Schumann resonance intensities**

TULUNAY Y., Altuntas E., Tulunay E., Price C., ÇİLOĞLU T., Bahadirlar Y., Senalp E. T.

● JOURNAL OF ATMOSPHERIC AND SOLAR-TERRESTRIAL PHYSICS, vol.70, pp.669-674, 2008 (Journal Indexed in SCI)

● **Turkish speech corpora and recognition tools developed by porting SONIC: Towards multilingual speech recognition**

Salor O., Pellom B. L., Ciloglu T., Demirekler M.

● COMPUTER SPEECH AND LANGUAGE, vol.21, pp.580-593, 2007 (Journal Indexed in SCI)

● **An efficient method for snore/nonsnore classification of sleep sounds**

Cavusoglu M., Kamasak M., Erogul O., Ciloglu T., Serinagaoglu Y., Akcam T.

● PHYSIOLOGICAL MEASUREMENT, vol.28, pp.841-853, 2007 (Journal Indexed in SCI)

● **New initialization methods for discrete coefficient FIR filter design with coefficient scaling and the use of scale factor in the design process**

Ciloglu T.

● IEEE TRANSACTIONS ON SIGNAL PROCESSING, vol.54, pp.796-800, 2006 (Journal Indexed in SCI)

● **Segmental duration modelling in Turkish**

Ozturk O., Ciloglu T.

● TEXT, SPEECH AND DIALOGUE, PROCEEDINGS, vol.4188, pp.669-676, 2006 (Journal Indexed in SCI)

● **Recognizing events in an automated surveillance system**

Orten B., Alatan A. A., Ciloglu T.

● MULTIMEDIA CONTENT REPRESENTATION, CLASSIFICATION AND SECURITY, vol.4105, pp.434-441, 2006 (Journal Indexed in SCI)

● **An efficient local search method guided by gradient information for discrete coefficient FIR filter design**

Ciloglu T.

● SIGNAL PROCESSING, vol.82, pp.1337-1350, 2002 (Journal Indexed in SCI)

● **Design of FIR filters for low implementation complexity**

Ciloglu T.

● ELECTRONICS LETTERS, vol.35, pp.529-530, 1999 (Journal Indexed in SCI)

● **Applications of simulated annealing for the design of special digital filters - Comments**

Ciloglu T., Unver Z.

IEEE TRANSACTIONS ON SIGNAL PROCESSING, vol.44, pp.983-984, 1996 (Journal Indexed in SCI)

Refereed Congress / Symposium Publications in Proceedings

● **Gradient controlled improved proportionate affine projection sign algorithm**

Çiloğlu T.

2018 26th Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018, pp.1-5

● **Enhanced Modelling of Guitar Distortion**

Zeki E., ÇİLOĞLU T.

23rd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.1473-1476

● **Removing Grating Lobes in Sparse Sensor Arrays with a Nonlinear Approach**

Epcacan E., ÇİLOĞLU T., CANDAN Ç., Mehmetcik E.

23rd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.1950-1953

● **AN UNSUPERVISED AUDIO SEGMENTATION METHOD USING BAYESIAN INFORMATION CRITERION**

Ozan E. C. , Tankiz S., Acar B. O. , ÇİLOĞLU T.

6th International Symposium on Communications, Control and Signal Processing (ISCCSP), Athens, Greece, 21 - 23 May 2014, pp.640-643

● **Detection of Post Apnea Sounds and Apnea Periods from Sleep Sounds**

Karci E., SERİNAĞAOĞLU DOĞRUSÖZ Y., ÇİLOĞLU T.

33rd Annual International Conference of the IEEE Engineering-in-Medicine-and-Biology-Society (EMBS), Massachusetts, United States Of America, 30 August - 03 September 2011, pp.6075-6078

● **SPEECH DETECTION ON BROADCAST AUDIO**

Zubari U., Ozan E. C. , Acar B. O. , ÇİLOĞLU T., Esen E., Ates T. K. , Onur D. O.

18th European Signal Processing Conference (EUSIPCO), Aalborg, Denmark, 23 - 27 August 2010, pp.85-89

● **Spectral envelope analysis of snoring signals**

Çavuşoğlu M., Kamasla M., ÇİLOĞLU T., Serinağaoğlu Y., Eroğul O.

6th IASTED International Conference on Biomedical Engineering, BioMED 2008, Innsbruck, Austria, 13 - 15 February 2008, pp.473-477

● **Exploitation of multi-camera configurations for visual surveillance**

Akman O., ALATAN A. A. , ÇİLOĞLU T.

International Workshop on Content-Based Multimedia Indexing, London, Canada, 18 - 20 June 2008, pp.125-130

● **<bold>SPECTRAL ENVELOPE ANALYSIS FOR SIMPLE SNORERS AND OBSTRUCTIVE SLEEP APNEA PATIENTS</bold>**

Cavusoglu M., Kamasak M., Eroglu O., ÇİLOĞLU T., SERİNAĞAOĞLU DOĞRUSÖZ Y., Birkent H.

IEEE 15th Signal Processing and Communications Applications Conference, Eskişehir, Turkey, 11 - 13 June 2007, pp.1170-1171

● **Spectral envelope analysis for simple snorers and obstructive sleep apnea patients Tikanmaya bağlı uyku apnesi hastalari ve basit horlayanlarda horlama seslerinin izgesel zarf incelemesi**

Çavuşoğlu M., Kamaşak M., Eroğul O., ÇİLOĞLU T., Serinağaoğlu Y., Birkent H.

2007 IEEE 15th Signal Processing and Communications Applications, SIU, Eskişehir, Turkey, 11 - 13 June 2007

● **Segmental Duration Modeling in Turkish**

Ozturk O., ÇİLOĞLU T.

9th International Conference on Spoken Language Processing/INTERSPEECH 2006, Pennsylvania, United States Of America, 01 January 2006, pp.2378-2380

● **OrienTel: Turkish telephone speech database**

Ciloglu T., Acar D., Tokatli A.

IEEE 12th Signal Processing and Communications Applications Conference, Kusadasi, Turkey, 28 - 30 April 2004, pp.280-283

● **A DSP based active noise controller for headphones**

Tokatli A., Ciloglu T.

IEEE 12th Signal Processing and Communications Applications Conference, Kusadasi, Turkey, 28 - 30 April 2004, pp.649-652

● **Language modelling for Turkish as an agglutinative language**

Ciloglu T., Comez M., Sahin S.

IEEE 12th Signal Processing and Communications Applications Conference, Kusadasi, Turkey, 28 - 30 April 2004, pp.461-462

● **Normalized peak ripple magnitude as an objective function in discrete coefficient fir filter design**

Ciloglu T.

44th IEEE Midwest Symposium on Circuits and Systems (MWSCAS 2001), Drayton, Canada, 14 - 17 August 2001, pp.122-125

● **Fusing length and voicing information, and HMM decision using a Bayesian Causal Tree against insufficient training data**

Demirekler M., Karahan F., Ciloglu T.

15th International Conference on Pattern Recognition (ICPR-2000), Barcelona, Spain, 3 - 07 September 2000, pp.102-105

● **An improved all-pass watermarking scheme for speech and audio**

Ciloglu T., Karaaslan S.

1st IEEE International Conference on Multimedia and Expo (ICME2000), New-York, United States Of America, 30 July - 02 August 2000, pp.1017-1020

● **Design of FIR filters with arbitrary magnitude and phase responses and powers-of-two coefficients**

Ciloglu T.

1st European Conference on Signal Analysis and Prediction (ECSAP-97), PRAGUE, Czech Republic, 24 - 27 June 1997, pp.167-170

● **A NOVEL METHOD FOR DISCRETE COEFFICIENT FIR DIGITAL FILTER DESIGN**

CILOGLU T., UNVER Z.

1994 IEEE International Symposium on Circuits and Systems, London, Canada, 30 May - 02 June 1994

● **DESIGN OF FIR FILTERS WITH POWERS OF 2 COEFFICIENTS BASED ON A NEW QUANTIZATION QUALITY CRITERION**

CILOGLU T., UNVER Z.

1994 IEEE International Conference on Acoustics, Speech and Signal Processing, Adelaide, Australia, 19 - 22 April 1994, pp.561-564

● **A NEW GRADIENT APPROXIMATION METHOD FOR THE DESIGN OF MINMAX FIR FILTERS WITH POWERS OF 2 COEFFICIENTS**

CILOGLU T., UNVER Z.

7th Mediterranean Electrotechnical Conference (MeleCON 94), Antalya, Turkey, 12 - 14 April 1994, pp.113-116

Patent

ÇİLOĞLU T., Adaptive voice-feature-enhanced matchmaking method and system, Patent, CHAPTER A Human Needs, Initial Registration, 2008

Scientific Refereeing

SIGNAL PROCESSING, SCI Journal, September 2018

ELECTRONICS LETTERS, SCI Journal, July 2018
ELECTRONICS LETTERS, SCI Journal, April 2018
ELECTRONICS LETTERS, SCI Journal, March 2018
ELECTRONICS LETTERS, SCI Journal, February 2018

Citations

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