

Prof. ÜNAL ERKAN MUMCUOĞLU

Personal Information

Office Phone: [+90 312 210 3753](tel:+903122103753)

Email: merkan@metu.edu.tr

Web: <https://avesis.metu.edu.tr/merkan>

Education Information

Doctorate, University Of Southern California, Electrical Engineering, United States Of America 1990 - 1994

Post Graduate, İhsan Doğramacı Bilkent Üniversitesi, Mühendislik Ve Fen Bilimleri Enstitüsü, Elektrik Ve Elektronik Mühendisliği (YL) (Tezli), Turkey 1987 - 1990

Under Graduate, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, Turkey 1982 - 1987

Foreign Languages

English, B2 Upper Intermediate

Research Areas

Biomedical Engineering, Biomedical Image Processing, Engineering and Technology

Academic Titles / Tasks

Professor, Middle East Technical University, Graduate School of Informatics, Medical Informatics, 2013 - Continues

Associate Professor, Middle East Technical University, Graduate School of Informatics, Information Systems, 2008 - 2013

Assistant Professor, Middle East Technical University, Graduate School of Informatics, Information Systems, 2002 - 2008

Professional Experience

Head of Department, Middle East Technical University, Graduate School of Informatics, Medical Informatics, 2005 - 2008

Advising Theses

MUMCUOĞLU Ü. E. , Single-image bayesian restoration and multi-image super-resolution restoration for b-mode ultrasound images using an accurate system model, Doctorate, M.Cüneyitoğlu(Student), 2019

MUMCUOĞLU Ü. E. , A deep learning approach to surface reconstruction for surgical navigation during laparoscopic, endoscopic or robotic surgery, Post Graduate, A.Zabardast(Student), 2019

MUMCUOĞLU Ü. E. , Semi-automatic segmentation of mitochondria on transmission electron microscopy images using live-wire and surface dragging methods, Post Graduate, M.FARZIN(Student), 2017

MUMCUOĞLU Ü. E. , Semi-automatic segmentation of mitochondria on electron microscopy images using kalman filtering approach, Post Graduate, A.Mohammadi(Student), 2016

MUMCUOĞLU Ü. E. , Detection and segmentation of mitochondria from electron microscope tomography images, Doctorate, F.SERDAR(Student), 2016

MUMCUOĞLU Ü. E. , Automatic segmentation of cristae membranes in 3d electron microscopy tomography images using artificial neural networks, Post Graduate, M.ALPHAN(Student), 2016

MUMCUOĞLU Ü. E. , Semi-automatic/user-guided segmentation of mitochondria on transmission electron microscopy images, Post Graduate, M.ÇÖÇELLİ(Student), 2015

MUMCUOĞLU Ü. E. , Predicting the level of knee osteoarthritis by using dimension reduction techniques on time series features of gait data, Post Graduate, S.CANER(Student), 2013

ÖZKAN YILDIRIM S., MUMCUOĞLU Ü. E. , Analyses of factors affecting acceptance of homecare technologies by patients with chronic diseases, Post Graduate, A.KUTLAY(Student), 2012

KANOĞLU U., MUMCUOĞLU Ü. E. , Automatic Bayesian segmentation of human facial tissue using 3D MR-CT fusion by incorporating models of measurement blurring, noise and partial volume, Doctorate, E.Şener(Student), 2012

MUMCUOĞLU Ü. E. , Segmentation of human facial muscles on ct and mri data using level set and bayesian methods, Post Graduate, H.Emre(Student), 2011

MUMCUOĞLU Ü. E. , Computational representation of protein sequences for homology detection and classification, Doctorate, H.Oğul(Student), 2006

MUMCUOĞLU Ü. E. , Design and implementation of mobile patient data collection and transmission for an emergency ambulance, Post Graduate, E.Kösen(Student), 2004

MUMCUOĞLU Ü. E. , A geographic information system application for ambulance routing services : a prototype, Post Graduate, B.Gülden(Student), 2004

MUMCUOĞLU Ü. E. , Interactive volume rendering for medical images, Post Graduate, K.Orhun(Student), 2004

MUMCUOĞLU Ü. E. , Mumcuoğlu Ü., Analysis of microarray images using fcm and k-means clustering algorithms, Post Graduate, E.Ergüt(Student), 2003

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

- I. **Single-image Bayesian Restoration and Multi-image Super-resolution Restoration for B-mode Ultrasound Using an Accurate System Model Involving Correlated Nature of the Speckle Noise.**
Cüneyitoğlu Ö., Mumcuoğlu Ü. E. , Sancak İ.
Ultrasonic imaging, vol.41, pp.368-386, 2019 (Journal Indexed in SCI)
- II. **A validated active contour method driven by parabolic arc model for detection and segmentation of mitochondria**
Tasel S. F. , Mumcuoglu E. U. , Hassanpour R. Z. , Perkins G.
JOURNAL OF STRUCTURAL BIOLOGY, vol.194, pp.253-271, 2016 (Journal Indexed in SCI)
- III. **Bayesian segmentation of human facial tissue using 3D MR-CT information fusion, resolution enhancement and partial volume modelling**
Şener E., Mumcuoglu E. U. , Hamcan S.
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol.124, pp.31-44, 2016 (Journal Indexed in SCI)
- IV. **Image Analysis for Cystic Fibrosis: Computer-Assisted Airway Wall and Vessel Measurements from Low-Dose, Limited Scan Lung CT Images**
Mumcuoglu E. U. , Long F. R. , Castile R. G. , Gurcan M. N.
JOURNAL OF DIGITAL IMAGING, vol.26, no.1, pp.82-96, 2013 (Journal Indexed in SCI)
- V. **Automatic segmentation of human facial tissue by MRI-CT fusion: A feasibility study**
Kale E. H. , Mumcuoglu E. U. , HAMCAN S.
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, vol.108, no.3, pp.1106-1120, 2012 (Journal Indexed in SCI)
- VI. **Computerized detection and segmentation of mitochondria on electron microscope images**
Mumcuoglu E. U. , Hassanpour R., Tasel S. F. , Perkins G., Martone M. E. , Gurcan M. N.
JOURNAL OF MICROSCOPY, vol.246, pp.248-265, 2012 (Journal Indexed in SCI)
- VII. **Computerized scar detection on renal cortical scintigraphy images**

MUMCUOĞLU Ü. E. , Bozkurt F. M. , Aslan M., Sener E., UĞUR Ö.

NUCLEAR MEDICINE COMMUNICATIONS, vol.32, no.11, pp.1070-1078, 2011 (Journal Indexed in SCI)

VIII. **Development of a Visio-Haptic Integrated Dental Training Simulation System**

Konukseven E. İ. , Önder M. E. , Mumcuoğlu Ü. E. , Kişnişçi R. S.

JOURNAL OF DENTAL EDUCATION, vol.74, pp.880-891, 2010 (Journal Indexed in SCI)

IX. **Subcellular localization prediction with new protein encoding schemes**

Ogul H., Mumcuoglu E. U.

IEEE-ACM TRANSACTIONS ON COMPUTATIONAL BIOLOGY AND BIOINFORMATICS, vol.4, no.2, pp.227-232, 2007 (Journal Indexed in SCI)

X. **A discriminative method for remote homology detection based on n-peptide compositions with reduced amino acid alphabets**

OĞUL H., Mumcuoğlu E. U.

BIOSYSTEMS, vol.87, no.1, pp.75-81, 2007 (Journal Indexed in SCI)

XI. **Sampling of sentinel nodes: A simulation study**

Celasun B., Mumcuoglu E. U. , Kalkan H.

ANALYTICAL AND QUANTITATIVE CYTOLOGY AND HISTOLOGY, vol.28, no.6, pp.346, 2006 (Journal Indexed in SCI)

XII. **SVM-based detection of distant protein structural relationships using pairwise probabilistic suffix trees**

Ogul H., Mumcuoglu E. U.

COMPUTATIONAL BIOLOGY AND CHEMISTRY, vol.30, no.4, pp.292-299, 2006 (Journal Indexed in SCI)

XIII. **Protein solvent accessibility prediction using support vector machines and sequence conservations**

Ogul H., Mumcuoglu E. U.

ARTIFICIAL INTELLIGENCE AND NEURAL NETWORKS, vol.3949, pp.141-148, 2006 (Journal Indexed in SCI)

XIV. **Discriminative remote homology detection using maximal unique sequence matches**

OGUL H., Mumcuoglu U.

ADVANCES IN INTELLIGENT DATA ANALYSIS VI, PROCEEDINGS, vol.3646, pp.283-292, 2005 (Journal Indexed in SCI)

XV. **FAST GRADIENT-BASED METHODS FOR BAYESIAN RECONSTRUCTION OF TRANSMISSION AND EMISSION PET IMAGES**

MUMCUOĞLU E., LEAHY R., CHERRY S., ZHOU Z.

IEEE TRANSACTIONS ON MEDICAL IMAGING, vol.13, no.4, pp.687-701, 1994 (Journal Indexed in SCI)

Books & Book Chapters

I. **Ultrasonik Tıbbi Görüntülemenin Temelleri ve Görüntü Analizinde Yeni Yaklaşımlar**

Cüneyitoğlu Özkul M., MUMCUOĞLU Ü. E.

in: Biyomedikal Mühendisliği ve Uygulamaları, Eroğul Osman, Koçak Onur, Editor, TMMOB, EMO Ankara Şubesi, Ankara, pp.319-348, 2019

II. **Chapter 13: Acceptance of Mobile Homecare Technologies: An Empirical Investigation on Patients with Chronic Diseases**

Özkan Yıldırım S., Kutluay A., Mumcuoğlu Ü. E.

in: CURRENT AND EMERGING M-HEALTH TECHNOLOGIES, sezgin,e yıldırım,s,i yıldırım,s sümür,e., Editor, Springer, London/Berlin , Berlin, pp.201-222, 2018

Refereed Congress / Symposium Publications in Proceedings

I. **Automatic detection of mitochondria from electron microscope tomography images: a curve fitting approach**

Tasel S. F. , HASSANPOUR R., Mumcuoglu E. U. , Perkins G., Martone M.

Conference on Medical Imaging - Image Processing, California, United States Of America, 16 - 18 February 2014, vol.9034

II. Image analysis for cystic fibrosis: Automatic lung airway wall and vessel measurement on CT images
MUMCUOĞLU Ü. E.

2009 Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 3 - 06 September 2009

III. Accurate geometric and physical response modelling for statistical image reconstruction in high resolution PET

MUMCUOĞLU Ü. E. , LEAHY R. M. , CHERRY S. R. , HOFFMAN E.

IEEE Nuclear Science Symposium, 1996, California, United States Of America, 2 - 09 November 1996, vol.3, pp.1569-1573

Supported Projects

MUMCUOĞLU Ü. E. , CÜNEYİTOĞLU ÖZKUL M., Project Supported by Higher Education Institutions, Serbest-el taramayla elde edilen B-modu ultrason videodan 3B hacimsel görüntü oluşturma, görüntü onarma, ters-evrişim ve çözünürlük-üstü uygulamalar, 2018 - 2019

MUMCUOĞLU Ü. E. , TUBITAK Project, AĞIZ 3 BOYUTLU GÖRÜNTÜSÜNÜ DİŞ ŞABLONU İLE EŞLEŞTİREREK DURUM TESPİTİ YAPABİLECEK TANI VE TEŞHİS KOYMAYA DOĞRU AKILLI ÖĞRENME ÖZELLİKLERİ EKLENEN YAZILIM PLATFORMU GELİŞTİRİLMESİ, 2016 - 2016

MUMCUOĞLU Ü. E. , Taşel S. F. , Project Supported by Higher Education Institutions, Elektron Mikroskop Tomografisi Görüntülerinde Mitokondri Tespiti ve Bölütlemesi, 2014 - 2014

Citations

Total Citations (WOS):309

h-index (WOS):8