

VOLUME

29

ISSUE

7

YEAR

2021

ISSN 1300-0632 • E-ISSN 1303-6203

TURKISH JOURNAL OF
ELECTRICAL
ENGINEERING
& COMPUTER
SCIENCES

<http://journals.tubitak.gov.tr/elektrik/>



Published by the Scientific and
Technological Research Council of Turkey

TÜBİTAK

TURKISH JOURNAL OF ENGINEERING & COMPUTER SCIENCES

Editor-in-Chief Muhammet Uzuntarla
Bülent Ecevit University, Turkey

Assistant Editor in Chief Sedat AKLEYLEK
Ondokuz Mayıs University, Turkey

Assistant Editor in Chief Ahmet Mete VURAL
Gaziantep University, Turkey

VOLUME 29 • ISSUE 7 • 2021
ISSN 1300-0632 • E-ISSN 1303-6203

SCOPE

- The Turkish Journal of Electrical Engineering & Computer Sciences is published electronically 6 times a year by the Scientific and Technological Research Council of Turkey (TÜBİTAK)
- Accepts English-language manuscripts in the areas of power and energy, environmental sustainability and energy efficiency, electronics, industry applications, control systems, information and systems, applied electromagnetics, communications, signal and image processing, tomographic image reconstruction, face recognition, biometrics, speech processing, video processing and analysis, object recognition, classification, feature extraction, parallel and distributed computing, cognitive systems, interaction, robotics, digital libraries and content, personalized healthcare, ICT for mobility, sensors, and artificial intelligence.
- Contribution is open to researchers of all nationalities.

EDITORIAL BOARD

- Akin TAŞCIKARAOĞLU, Muğla Sıtkı Koçman University, Turkey
- Ali KARA, Gazi University, Turkey
- Ali TOKER, Istanbul Technical University, Turkey
- Alptekin KÜPÇÜ, Koç University, Turkey
- Ayşegül UÇAR, Frat University, Turkey
- Baha ŞEN, Yıldırım Beyazıt University, Turkey
- Berrin YANIKOĞLU, Sabancı University, Turkey
- Birkan YILMAZ, Boğaziçi University, Turkey
- Burcu CAN, University of Wolverhampton, United Kingdom
- Bülent YILMAZ, Abdullah Gül University, Turkey
- Cemal YILMAZ, Sabancı University, Turkey
- Cengiz ACARTÜRK, Middle East Technical University, Turkey
- Cengiz KAHRAMAN, Istanbul Technical University, Turkey
- Cihan KARAKUZU, Bilecik Şeyh Edebali University, Turkey
- Emin ANARIM, Boğaziçi University, Turkey
- Emre SARIYILDIZ, University of Wollongong, Australia
- Enver EVER, Middle East Technical University, Turkey
- Erdoğan DOĞDU, Angelo State University, U.S.A.
- Ergun ERÇELEBİ, Gaziantep University, Turkey
- Güneş Zeynep KARABULUT KURT, Istanbul Technical University, Turkey
- Hakan KUTUCU, Karabük University, Turkey
- Hasan Fatih UĞURDAĞ, Özyeğin University, Turkey
- İbrahim Beklan KÜÇÜKDEMİRAL, Glasgow Caledonian University, United Kingdom
- Jafar A. ALZUBI, Al-Balqa Applied University, Jordan
- Josep M. GUERRERO, Aalborg University, Denmark
- Kemal OFLAZER, Carnegie Mellon University in Qatar, Qatar
- Kemal POLAT, Abant İzzet Baysal University, Turkey
- Koray KAYABOL, Gebze Technical University, Turkey
- Korkut YEĞİN, Ege University, Turkey
- Matjaz PERC, University of Maribor, Slovenia
- Mehmet Kemal LEBLEBİCİOĞLU, Middle East Technical University, Turkey
- Mehmet Önder EFE, Hacettepe University, Turkey
- Mehmet Siddık AKTAŞ, Yıldız Technical University, Turkey
- Murat GÖL, Middle East Technical University, Turkey
- Murat KARAKUŞ, Bayburt University, Turkey
- Mustafa Alper SELVER, Dokuz Eylül University, Turkey
- Mustafa Servet KIRAN, Konya Technical University, Turkey
- Nazlı İKİZLER CİNBIŞ, Hacettepe University, Turkey
- Nur Hüseyin KAPLAN, Erzurum Technical University, Turkey
- Onur VAROL, Sabancı University, Turkey
- Ozan ERDİNÇ, Yıldız Technical University, Turkey
- Ömer Neziğ GEREK, Anadolu University, Turkey
- Pınar KARAGÖZ, Middle East Technical University, Turkey
- Raif BAYIR, Karabük University, Turkey
- Ramazan BAYINDIR, Gazi University, Turkey
- Rifat HACIOĞLU, Bülent Ecevit University, Turkey
- Şaban ÖZTÜRK, Amasya University, Turkey
- Şenan Ece G. SCHMIDT, Middle East Technical University, Turkey
- Temel KAYIKÇIOĞLU, Karadeniz Technical University, Turkey
- Tuğrul ÇAVDAR, Karadeniz Technical University, Turkey
- Tunga GÜNGÖR, Boğaziçi University, Turkey
- Yalçın İŞLER, İzmir Katip Çelebi University, Turkey
- Yasin KABALCI, Niğde Ömer Halisdemir University, Turkey

ABSTRACTED

- Science Citation Index Expanded
- Scopus
- Academic Search Complete
- Inspec

CONTENTS

Learning prototypes for multiple instance learning	2901
Özgür Emre SİVRİKAYA, Mert YÜKSEKGÖNÜL, Mustafa Gökçe BAYDOĞAN	
Sleep staging with deep structured neural net using Gabor layer and data augmentation	2920
Ali ERFANI SHOLEYAN, Fereidoun NOWSHIRAVAN RAHATABAD, Seyed Kamaledin SETAREHDAN	
Design development and performance analysis of distributed least square twin support vector machine for binary classification	2934
Bakshi Rohit PRASAD, Sonali AGARWAL	
Design and analysis of a truncated elliptical-shaped chipless RFID tag	2950
Ameer Taimour KHAN, Yassin ABDULLAH, Sidra FARHAT, Wasim NAWAZ, Usman RAUF	
Advanced single-loop discrete-time control for T-type voltage source inverter with minimum capacitor voltage ripple modulation	2962
Manh Linh NGUYEN, Phuong VU	
An integrated optimal method for cloud service ranking	2983
MOHAMMAD HOSSEIN NEJAT, HOMAYUN MOTAMENI, HAMED VAHDAT-NEJAD	
An MIH-enhanced fully distributed mobility management (MF-DMM) solution for real and non-real time CVBR traffic classes in mobile internet	3004
Parasuraman SANKARANARAYANAN, Rajaraman GAYATHRI, Ramachandiran TAMIJETCHELVY	
Joint carrier frequency and phase offset estimation algorithm for CPM-DSSS based secure point-to-point communication	3020
Saima SHEHZADI, Farzana KULSOOM, Muhammad ZEESHAN, Qasim Umar KHAN, Shahzad Amin SHEIKH	
Robust and efficient EBG-backed wearable antenna for ISM applications	3036
Ayesha Saeed, Asma Ejaz, Humayun Shahid, Yasar Amin, Hannu Tenhunen	
Scale-invariant histogram of oriented gradients: novel approach for pedestrian detection in multiresolution image dataset	3053
Sweta PANIGRAHI, Surya Narayana Raju UNDI	
CSOP+RP: a novel constraints satisfaction model for requirements prioritization in large-scale software systems	3074
Soheil Afraz, Hassan Rashidi, Nasser Mikaeilvand	

Improved online sequential extreme learning machine: OS-CELM	3092
Olcaý TOSUN, Recep ERYİĐİT	
Deep learning for Turkish makam music composition	3107
İsmail Hakkı PARLAK, Yalçın ÇEBİ, Cihan IŞIKHAN, Derya BİRANT	
Evaluation of cable and busbar system in multiconductor distribution systems in terms of current and magnetic field distributions	3119
Yunus Berat Demiroł, Mehmet Aytaç Çınar, Bora Alboyacı	
A model of service differentiation burst assembling and padding for improving transmission efficiency in OBS networks	3133
Van Hoa LE, Hong Quoc NGUYEN, Thanh Chuong DANG, Viet Minh Nhat VO	
HC-FFT: highly configurable and efficient FFT implementation on FPGA	3150
Pakize ERĐÜL, H. Fatih UĐURDAĐ, Dođancan DAVUTOĐLU	
Gene expression data classification using genetic algorithm-based feature selection	3165
Öznur Sinem SÖNMEZ, Mustafa DAĐTEKİN, Tolga ENSARİ	
Clustered mobile data collection in WSNs: an energy-delay trade-off	3180
Izzet Fatih SENTURK	
A hybrid approach based on transfer and ensemble learning for improving performances of deep learning models on small datasets	3197
Tunç Gültekin, Aybars Uđur	
An observer based temperature estimation in cooking heterogeneous mixtures: a Turkish coffee machine application	3212
Arda Dönerkayalı, Türker Türker	
A hybrid numerical model for long-range electromagnetic wave propagation	3225
Gül Yesa ALTUN, Özlem ÖZGÜN	
Presentation attack detection for face recognition using remote photoplethysmography and cascaded fusion	3240
Mehmet Fatih GÜNDÖĐAR, Çiđdem EROĐLU ERDEM	
Opinion dynamics of stubborn agents under the presence of a troll as differential game	3259
Aykut YILDIZ, Arif Bülent ÖZGÜLER	
Comparison of metaheuristic optimization algorithms with a new modified deb feasibility constraint handling technique	3270
Murat Erhan ÇİMEN, Zeynep GARIP, Ali Fuat BOZ	