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Education Information

Doctorate, Gebze Technical University, Faculty Of Engineering, Department Of Electronics Engineering, Turkey 1999 - 2005

Post Graduate, Gebze Technical University, Faculty Of Engineering, Department Of Electronics Engineering, Turkey 1997 - 1999

Under Graduate, Yıldız Technical University, Faculty Of Electrical & Electronics, Electronics And Communication Engineering, Turkey 1988 - 1992

Research Areas

Measuring Technique, Deformation Measurements, Industrial Measurements, Signal Processing, Computer Vision, Optics and Photonics, Electromagnetic, Electromagnetic Metrology, Lasers and Masers, Laser Scanning, Engineering and Technology

Academic Titles / Tasks

Professor, İstanbul Medeniyet University, Faculty Of Engineering And Natural Sciences , Electrical And Electronic Engineering, 2019 - Continues

Professor, Zonguldak Bülent Ecevit University, Faculty Of Engineering, 2017 - 2019

Associate Professor, Zonguldak Bülent Ecevit University, Faculty Of Engineering, 2012 - 2017

Assistant Professor, Zonguldak Bülent Ecevit University, Faculty Of Engineering, 2007 - 2012

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

- I. **Classification of power quality disturbances by 2D-Riesz Transform, multi-objective grey wolf optimizer and machine learning methods**
Karasu S., Saraç Z.
Digital Signal Processing: A Review Journal, vol.101, 2020 (Journal Indexed in SCI)
- II. **Crack Detection by Optical Voice Recorder Based on Digital Holography**
Ustabas Kaya G., Sarac Z.
PHOTONIC SENSORS, vol.9, no.4, pp.327-336, 2019 (Journal Indexed in SCI)
- III. **A new adaptive neuro-fuzzy solution for optimization of the parameters in the digital holography setup**
Kaya G. U. , ErKaymaz O., Sarac Z.
SOFT COMPUTING, vol.23, no.18, pp.8827-8837, 2019 (Journal Indexed in SCI)

- IV. **Chaotic resonance in Hodgkin-Huxley neuron**
Baysal V., Sarac Z., Yilmaz E.
NONLINEAR DYNAMICS, vol.97, no.2, pp.1275-1285, 2019 (Journal Indexed in SCI)
- V. **Effects of astrocyte on weak signal detection performance of Hodgkin-Huxley neuron**
Erkan Y., Sarac Z., Yilmaz E.
NONLINEAR DYNAMICS, vol.95, no.4, pp.3411-3421, 2019 (Journal Indexed in SCI)
- VI. **Investigation of power quality disturbances by using 2D discrete orthonormal S-transform, machine learning and multi-objective evolutionary algorithms**
Karasu S., Sarac Z.
SWARM AND EVOLUTIONARY COMPUTATION, vol.44, pp.1060-1072, 2019 (Journal Indexed in SCI)
- VII. **Usage of segmentation for noise elimination in reconstructed images in digital holographic interferometry**
Kaya G. U., Sarac Z.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.26, no.1, pp.234-244, 2018 (Journal Indexed in SCI)
- VIII. **Comparing of phase shifting method and one-dimensional continuous wavelet transform method for reconstruction using phase-only information**
Kaya G. U., Sarac Z.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.2, pp.1587-1597, 2017 (Journal Indexed in SCI)
- IX. **Optimization of digital holographic setup by a fuzzy logic prediction system**
Kaya G. U., Erkamaz O., Sarac Z.
EXPERT SYSTEMS WITH APPLICATIONS, vol.56, pp.177-185, 2016 (Journal Indexed in SCI)
- X. **Non-contact performance analysis of the core materials by digital holographic interferometry**
San U., Kaya G. U., Sarac Z.
IET SCIENCE MEASUREMENT & TECHNOLOGY, vol.10, no.1, pp.38-43, 2016 (Journal Indexed in SCI)
- XI. **Measurement of the parameters and the resonance frequency in semiconductor controlled Tesla transformer**
Gurleyuk S. S., Taskin H., Sarac Z.
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, vol.43, no.1, pp.6-10, 2012 (Journal Indexed in SCI)
- XII. **Real-time optical reconstruction of the diffused 3D object using phase information calculated by Continuous Wavelet Transform**
Tayyar D. O., Sarac Z., Ecevit F. N.
OPTICS COMMUNICATIONS, vol.284, no.23, pp.5460-5465, 2011 (Journal Indexed in SCI)
- XIII. **Evaluation of thermal lens fringes using Hilbert and Fourier transform methods**
Sarac Z., Birkok H. G., Taskin H., Ozturk E.
IET SCIENCE MEASUREMENT & TECHNOLOGY, vol.5, no.3, pp.81-87, 2011 (Journal Indexed in SCI)
- XIV. **Resonance analysis of a solid state controlled Tesla transformer**
Taskin H., Gurleyuk S. S., Sarac Z.
INTERNATIONAL JOURNAL OF APPLIED ELECTROMAGNETICS AND MECHANICS, vol.35, no.2, pp.141-150, 2011 (Journal Indexed in SCI)
- XV. **Determination of the dispersion curve of the refractive index by the Stockwell transform**
Sarac Z., Birkoek H. G., Ecevit F. N., Tutkun N.
IET OPTOELECTRONICS, vol.3, no.4, pp.180-186, 2009 (Journal Indexed in SCI)
- XVI. **Analysis of white-light interferograms by using Stockwell transform**
Sarac Z.
OPTICS AND LASERS IN ENGINEERING, vol.46, no.11, pp.823-828, 2008 (Journal Indexed in SCI)
- XVII. **Phase recovery from interference fringes by using S-transform**
Dursun A., Sarac Z., Topkara M. S., ÖZDER S., Ecevit F. N.
MEASUREMENT, vol.41, no.4, pp.403-411, 2008 (Journal Indexed in SCI)

- XVIII. **Calculation of refractive index changes from thermal lens fringes using continuous wavelet algorithm**
Sarac Z., Dursun A., Yerdelen S., Ecevit F. N.
OPTICS AND LASER TECHNOLOGY, vol.39, no.4, pp.769-773, 2007 (Journal Indexed in SCI)
- XIX. **Processing of thermal lens fringes by S-transform**
Sarac Z., Yerdelen S., Dursun A., Sarac H., Ecevit F. N.
OPTICS COMMUNICATIONS, vol.271, no.2, pp.349-352, 2007 (Journal Indexed in SCI)
- XX. **Wavelet phase evaluation of white light interferograms**
Sarac Z., Dursun A., Yerdelen S., Ecevit F.
MEASUREMENT SCIENCE AND TECHNOLOGY, vol.16, no.9, pp.1878-1882, 2005 (Journal Indexed in SCI)
- XXI. **Optimization of white light interferometry on rough surfaces based on error analysis**
Sarac Z., Gross R., Richter C., Wiesner B., Hausler G.
OPTIK, vol.115, no.8, pp.351-357, 2004 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Fiber Bragg Iızgara Sensörü için Merkezi Dalga Boyu Algılamaya Hilbert Dönüşümü Yaklaşımı**
Saraç Z.
Politeknik Dergisi, pp.1-15, 2021 (National Refreed University Journal)
- II. **Classification of Power Quality Disturbances with Hilbert-Huang Transform, Genetic Algorithm and Artificial Intelligence/Machine Learning Methods**
Karasu S., SARAÇ Z.
JOURNAL OF POLYTECHNIC-POLITEKNIK DERGISI, vol.23, no.4, pp.1219-1229, 2020 (Journal Indexed in ESCI)
- III. **Noise analysis for optical voice recorder based on off-axis digital holography**
Kaya G. U. , SARAÇ Z.
JOURNAL OF OPTICS-INDIA, vol.49, no.3, pp.315-322, 2020 (Journal Indexed in ESCI)
- IV. **Classification of Power Quality Disturbances with 2D Discrete Wavelet Transform and Bagged Decision Trees Method**
Karasu S., Sarac Z.
JOURNAL OF POLYTECHNIC-POLITEKNIK DERGISI, vol.21, no.4, pp.849-855, 2018 (Journal Indexed in ESCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **Prediction of Bitcoin prices with machine learning methods using time series data Zaman serisi verilerini kullanarak makine öğrenmesi yöntemleri ile bitcoin fiyat tahmini**
Karasu S., Altan A., Sarac Z., Hacıoglu R.
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- II. **Classification of power quality events signals with pattern recognition methods by using Hilbert transform and genetic algorithms Güç kalitesi bozulma sinyallerinin hilbert dönüşümü ve genetik algoritmalar kullanılarak örüntü tanıma yöntemleri ile siniflandırılması**
Karasu S., Sarac Z.
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- III. **The usage of artificial neural network as post processing algorithm in digital holography Sayısal holografide yapay sinir ağlarının son işlem algoritması olarak kullanılması**
Kaya G. U. , Sarac Z.
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4

- IV. **Effects of calcium channel noise on weak signal detection in neuron-astrocyte interactions Nöron-astroisit etkileşiminde kalsiyum kanal gürültüsünün zayıf sinyal sezinlemeye etkileri**
Erkan Y., Saraç Z., Yılmaz E.
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- V. **The Determination of Crack on Glass Surface by Optical Voice Detector Based on Digital Holography**
Kaya G. U. , Sarac Z.
1st International Conference on Optics, Photonics and Lasers (OPAL), Barcelona, Spain, 9 - 11 May 2018, pp.171-175
- VI. **The Fast Optimization of Digital Holography System**
Ustabas Kaya G., Sarac Z.
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- VII. **Prediction of Wind Speed with Non-Linear Autoregressive (NAR) Neural Networks**
Karasu S., Altan A., Sarac Z., Hacıoglu R.
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- VIII. **Classification of Power Quality Disturbances with S-Transform and Artificial Neural Networks Method**
Karasu S., Sarac Z.
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- IX. **IMAGE RECONSTRUCTION FROM PHASE HOLOGRAM OBTAINED BY USING SINGLE PHASE INFORMATION**
Kaya G. U. , Sarac Z., Tayyar D. O.
22nd IEEE Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, 23 - 25 April 2014, pp.148-151
- X. **A reconfigurable microwave photonic filter based on four wave mixing in a silicon nanophotonic waveguide**
Li J., Adams R., Sarac Z., Berardo D., Chen L. R.
Photonics North Conference, Ottawa, Canada, 3 - 05 June 2013, vol.8915
- XI. **Comparing Nonlinear Fiber and a Silicon Nanophotonic Waveguide for Implementing a Microwave Photonic Filter**
Adams R., Li J., Sarac Z., Berardo D., Chen L. R.
26th IEEE Photonics Conference (IPC), Washington, United States Of America, 8 - 12 September 2013, pp.404-405
- XII. **Optical reconstruction of three-dimensional object from digital holograms using phase information calculated by continuous wavelet transform**
Sarac Z., Tayyar D. O. , Ecevit F. N.
Conference on Holography - Advances and Modern Trends II, Prague, Czech Republic, 18 - 20 April 2011, vol.8074
- XIII. **Investigation of electromagnetic pollution at frequency band of the 100 kHz - 3 GHz of center of zonguldak Zonguldak kent merkezinin 100 kHz - 3 GHz frekans bandında elektromanyetik kirliliğinin araştırılması**
Özgümüş B., Görmüş K. S. , Saraç Z., Özer M.
2010 7th National Conference on Electrical, Electronics and Computer Engineering, ELECO 2010, Bursa, Turkey, 2 - 05 December 2010, pp.454-458
- XIV. **Optical signal processing of interference fringes by Hartley transform method**
Kaya H., Sarac Z., Ozer M., Taskin H.
17th Slovak-Czech-Polish Optical Conference on Wave and Quantum Aspects of Contemporary Optics, Liptovsky Jan, Slovakia, 6 - 10 September 2010, vol.7746
- XV. **Phase recovery from interference fringes by Hilbert transform**
Saraç Z., Birkök H. G. , Emir A., Dursun A.
Applications of Digital Image Processing XXXII, San Diego, CA, United States Of America, 3 - 05 August 2009, vol.7443
- XVI. **Determination of Thermal Lens effect by white light interferometry**

Tayyara D. Ö. , Emir A., Saraç Z.

Optical Measurement Systems for Industrial Inspection VI, Munich, Germany, 15 - 18 June 2009, vol.7389

XVII. Effect of Filtering on Processing of Thermal Lens Fringes by Single Sideband Modulation Technique

Emir A., Sarac Z.

IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009, pp.295-296

XVIII. An application of the S-transform to optical 3-D surface profile measurement

Dursun A., Sarac Z., Ecevit N.

IEEE 14th Signal Processing and Communications Applications, Antalya, Turkey, 16 - 19 April 2006, pp.595-596

Citations

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