Doç.Dr. İlkay Öksüz

Kişisel Bilgiler

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Biyografi

İstanbul Teknik Üniversitesi Bilgisayar Mühendisliği Bölümünde Dr. Öğretim üyesi olarak çalışmaktayım. Daha önce, King's College London'ın Biyomedikal Mühendisliği Bölümünde araştırmacı olarak çalışıyordum. Doktora derecemi Toskana'da meritokratik bir yüksek öğrenim okulu olan ve adayların sadece % 2'sinin kabul edildiği IMT İleri Araştırmalar Okulu'nda Bilgisayar, Karar ve Sistem Bilimi üzerine yaptım. 2017 yılında Edinburgh Üniversitesi IDCOM laboratuvarında misafir araştırmacı olarak çalıştım. 2016 yılında Yale Üniversitesi Diagnostik Radyoloji Bölümünde doktora öğrencisi olarak çalışmalarda bulundum.

Eğitim Bilgileri

Doktora, IMT Institute for Advanced studies, Lucca, İtalya 2013 - 2018
Yüksek Lisans, Bahçeşehir Üniversitesi, Türkiye 2011 - 2013
Lisans, İstanbul Teknik Üniversitesi, Türkiye 2006 - 2010

Yabancı Diller

İngilizce, C2 Ustalık
İtalyanca, B1 Orta
Almanca, C2 Ustalık

Araştırma Alanları

Yapay Zeka, Bilgisayarda Öğrenme ve Örüntü Tanıma, Mühendislik ve Teknoloji

Akademik Unvanlar / Görevler

Araştırma Görevlisi Dr., University of London-Kings College London, Biyomedikal Mühendisliği Bölümü, 2017 - Devam Ediyor
Araştırmacı, University of Edinburgh, Dijital Haberleşme Enstitüsü, 2017 - 2017
Araştırma Görevlisi, Yale University, Radyoloji ve Biyomedikal Görüntüleme, 2015 - 2016

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

I. **A Deep Learning-based Integrated Framework for Quality-aware Undersampled Cine Cardiac MRI Reconstruction and Analysis**
Machado I., Puyol-Anton E., Hammernik K., Cruz G., Ugurlu D., Olakorede I., Öksüz İ., Ruijsink B., Castelo-Branco M., Young A., et al.
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II. **Anatomically guided self-adapting deep neural network for clinically significant prostate cancer detection on bi-parametric MRI: a multi-center study**
Karagoz A., Alis D., Seker M. E., Zeybel G., Yergin M., Öksüz İ., KARAARSLAN E.
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III. **Automated LVO detection and collateral scoring on CTA using a 3D self-configuring object detection network: a multi-center study**
Bagcilar O., ALİS D. C., Alis C., Seker M. E., Yergin M., Ustundag A., Hikmet E., Tezcan A., Polat G., Akkus A. T., et al.
Scientific Reports, cilt.13, sa.1, 2023 (SCI-Expanded)

IV. **Deep learning for assessing image quality in bi-parametric prostate MRI: A feasibility study**
ALİS D. C., Kartal M. S., Seker M. E., Guroz B., Basar Y., Arslan A., Sirolu S., Kurtcan S., Denizoglu N., Tuzun U., et al.
European Journal of Radiology, cilt.165, 2023 (SCI-Expanded)

V. **Transfer learning for electricity price forecasting**
Gunduz S., Ugurlu U., Öksüz İ.
Sustainable Energy, Grids and Networks, cilt.34, 2023 (SCI-Expanded)

VI. **A Hybrid Fusion Method Combining Spatial Image Filtering with Parallel Channel Network for Retinal Vessel Segmentation**
Yakut C., Öksüz İ., ULUKAYA S.
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, cilt.48, sa.5, ss.6149-6162, 2023 (SCI-Expanded)

VII. **Block Attention and Switchable Normalization based Deep Learning Framework for Segmentation of Retinal Vessels**
Deari S., Öksüz İ., ULUKAYA S.
IEEE Access, cilt.11, ss.38263-38274, 2023 (SCI-Expanded)

VIII. **A Survey on Shape-Constraint Deep Learning for Medical Image Segmentation**
Bohlender S., Öksüz İ., Mukhopadhyay A.
IEEE Reviews in Biomedical Engineering, cilt.16, ss.225-240, 2023 (SCI-Expanded)

IX. **A Topological Loss Function for Deep-Learning Based Image Segmentation Using Persistent Homology**
Clough J. R., Byrne N., Öksüz İ., Zimmer V. A., Schnabel J. A., King A. P.
IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, cilt.44, sa.12, ss.8766-8778, 2022 (SCI-Expanded)

X. **Channel Attention Networks for Robust MR Fingerprint Matching**
Soyak R., Navruz E., Ersoy E. O., Cruz G., Prieto C., King A. P., Unay D., Öksüz İ.
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XI. **Neural network dose prediction for rectal spacer stratification in dose-escalated prostate radiotherapy**
Thomas C., Dregely I., Öksüz İ., Urbano T. G., Greener T., King A. P., Barrington S. F.
MEDICAL PHYSICS, cilt.49, sa.4, ss.2172-2182, 2022 (SCI-Expanded)

XII. **A joint convolutional-recurrent neural network with an attention mechanism for detecting intracranial hemorrhage on noncontrast head CT**
ALİS D. C., Alis C., Yergin M., Topel C., Asmakutlu O., Bagcilar O., Senli Y. D., ÜSTÜNDAĞ A., SALT V., Dogan S. N., et al.
SCIENTIFIC REPORTS, cilt.12, sa.1, 2022 (SCI-Expanded)

XIII. **Left Ventricle Quantification Challenge: A Comprehensive Comparison and Evaluation of Segmentation and Regression for Mid-Ventricular Short-Axis Cardiac MR Data**
Xue W., Li J., Hu Z., Kerfoot E., Clough J., Oksuz I., Xu H., Grau V., Guo F., Ng M., et al.

IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, cilt.25, sa.9, ss.3541-3553, 2021 (SCI-Expanded)

XIV. **Inter-vendor performance of deep learning in segmenting acute ischemic lesions on diffusion-weighted imaging: a multicenter study**
ALİS D. C., Yergin M., ALİŞ C., Topel C., Asmakutlu O., Bagcilar O., Senli Y. D., ÜSTÜNDAĞ A., SALT V., Dogan S. N., et al.
SCIENTIFIC REPORTS, cilt.11, sa.1, 2021 (SCI-Expanded)

XV. **Brain MRI artefact detection and correction using convolutional neural networks**
Öksüz İ.
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE, cilt.199, 2021 (SCI-Expanded)

XVI. **Comparison of machine learning methods for prediction of osteoradionecrosis incidence in patients with head and neck cancer**
Humbert-Vidan L., Patel V., Oksuz I., King A. P., Urbano T. G.
BRITISH JOURNAL OF RADIOLOGY, cilt.94, sa.1120, 2021 (SCI-Expanded)

XVII. **Deep Learning-Based Detection and Correction of Cardiac MR Motion Artefacts During Reconstruction for High-Quality Segmentation**
Öksüz İ., Clough J. R., Ruijsink B., Anton E. P., Bustin A., Cruz G., Prieto C., King A. P., Schnabel J. A.
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XVIII. **A multi-scale variational neural network for accelerating motion-compensated whole-heart 3D coronary MR angiography**
Fuin N., Bustin A., Kustner T., Öksüz İ., Clough J., King A. P., Schnabel J. A., Botnar R. M., Prieto C.
MAGNETIC RESONANCE IMAGING, cilt.70, ss.155-167, 2020 (SCI-Expanded)

XIX. **Fully Automated, Quality-Controlled Cardiac Analysis From CMR Validation and Large-Scale Application to Characterize Cardiac Function**
Ruijsink B., Puyol-Antón E., Oksuz İ., Sinclair M., Bai W., Schnabel J., Razavi R., King A.
JACC-CARDIOVASCULAR IMAGING, cilt.13, sa.3, ss.684-695, 2020 (SCI-Expanded)

XX. **An objective comparison of detection and segmentation algorithms for artefacts in clinical endoscopy**
Ali S., Zhou F., Braden B., Bailey A., Yang S., Cheng G., Zhang P., Li X., Kayser M., Soberanis-Mukul R. D., et al.
SCIENTIFIC REPORTS, cilt.10, sa.1, 2020 (SCI-Expanded)

XXI. **Neural Network Based Model Comparison for Intraday Electricity Price Forecasting**
Oksuz İ., Ugurlu U.
ENERGIES, cilt.12, sa.23, 2019 (SCI-Expanded)

XXII. **Automatic CNN-based detection of cardiac MR motion artefacts using k-space data augmentation and curriculum learning**
Oksuz İ., Ruijsink B., Puyol-Anton E., Clough J. R., Cruz G., Bustin A., Prieto C., Botnar R., Rueckert D., Schnabel J. A., et al.
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XXIII. **Accurate needle-free assessment of myocardial oxygenation for ischemic heart disease in canines using magnetic resonance imaging**
Yang H., Oksuz İ., Dey D., Sykes J., Klein M., Butler J., Kovacs M. S., Sobczyk O., Cokic I., Slomka P. J., et al.
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XXIV. **The Financial Effect of the Electricity Price Forecasts' Inaccuracy on a Hydro-Based Generation Company**
Ugurlu U., Taş O., Kaya A., Oksuz İ.
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XXV. **Electricity Price Forecasting Using Recurrent Neural Networks**
Ugurlu U., Oksuz İ., Tas O.
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XXVI. **Statistical Shape Modeling of the Left Ventricle: Myocardial Infarct Classification Challenge**
Suinesiaputra A., Ablin P., Alba X., Alessandrini M., Allen J., Bai W., Cimen S., Claes P., Cowan B. R., D'hooge J., et al.
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XXVII. **Unsupervised Myocardial Segmentation for Cardiac BOLD**

Oksuz İ., Mukhopadhyay A., Dharmakumar R., Tsaftaris S. A.
IEEE TRANSACTIONS ON MEDICAL IMAGING, cilt.36, sa.11, ss.2228-2238, 2017 (SCI-Expanded)

XXVIII. **Comparing algorithms for automated vessel segmentation in computed tomography scans of the lung: the VESSEL12 study**
Rudyanto R. D., Kerkstra S., van Rilowort E. M., Fetita C., Brillet P., Lefevre C., Xue W., Zhu X., Liang J., Oksuz İ., et al.
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XXIX. **Standardized evaluation framework for evaluating coronary artery stenosis detection, stenosis quantification and lumen segmentation algorithms in computed tomography angiography**
Kirisli H. A., SCHAAP M., METZ C. T., DHARAMPAL A. S., MEIJBOOM W. B., PAPADOPOULOU S. L., DEDIC A., NIEMAN K., DE GRAAF M. A., Meijs M. F. L., et al.
MEDICAL IMAGE ANALYSIS, cilt.17, sa.8, ss.859-876, 2013 (SCI-Expanded)

Diğer Dergilerde Yayınlanan Makaleler

I. **Super-resolution with generative adversarial networks for improved object detection in aerial images**
Haykir A. A., Öksüz İ.
INFORMATION DISCOVERY AND DELIVERY, cilt.51, sa.4, ss.349-357, 2023 (ESCI)

II. **DGM4MICCAI 2022 Preface**
Mukhopadhyay A., Öksüz İ., Engelhardt S., Zhu D., Yuan Y.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), cilt.13609 LNCS, 2022 (Scopus)

Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

I. **Detection and correction of cardiac MRI motion artefacts during reconstruction from k-space**
ÖKSÜZ İ., Clough J. R., Ruijsink B., Puyol-Anton E., Bustin A., Cruz G., Prieto C., Rueckert D., King A. P., Schnabel J. A.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 13 - 17 Ekim 2019, cilt.11767, ss.695

II. **Global and local interpretability for cardiac MRI classification**
Clough J. R., ÖKSÜZ İ., Puyol-Anton E., Ruijsink B., King A. P., Schnabel J. A.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 13 - 17 Ekim 2019, cilt.11767, ss.656

III. **Mechanically Powered Motion Imaging Phantoms: Proof of Concept**
Gomez A., schmitz C., henningson m., Housden J., Noh Y., Zimmer V. A., Clough J. R., ÖKSÜZ İ., Toussaint N., King A. P., et al.
2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Berlin, Germany, 23 - 27 Temmuz 2019, cilt.2019, ss.2723-2726

IV. **MAGNETIC RESONANCE FINGERPRINTING USING RECURRENT NEURAL NETWORKS**
ÖKSÜZ İ., Cruz G., Clough J. R., Bustin A., Fuin N., Botnar R., Prieto C., King A. P., Schnabel J. A.
2019 IEEE 16TH INTERNATIONAL SYMPOSIUM ON BIOMEDICAL IMAGING (ISBI 2019), Venice, İtalya, 8 - 11 Nisan 2019, ss.1537-1540

V. **Explicit Topological Priors for Deep-Learning Based Image Segmentation Using Persistent Homology**
Clough J. R., ÖKSÜZ İ., Bryne N., Schnabel J. A., King A. P.
INFORMATION PROCESSING IN MEDICAL IMAGING, IPMI 2019, Hong Kong, 2 - 07 Haziran 2019

VI. **Artefact detection in video endoscopy using retinanet and focal loss function**
ÖKSÜZ İ., Clough J. R., King A. P., Schnabel J. A.
CEUR Workshop Proceedings, 08 Nisan 2019, cilt.2366

VII. **Left-Ventricle Quantification Using Residual U-Net**

Kerfoot E., Clough J. R., ÖKSÜZ İ., Lee J., King A. P., Schnabel J. A.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 16 Eylül 2018, cilt.11395, ss.371

VIII. **Deep learning using K-space based data augmentation for automated cardiac MR motion artefact detection**
ÖKSÜZ İ., Ruijsink B., Puyol-Anton E., Bustin A., Cruz G., Prieto C., Rueckert D., Schnabel J. A., King A. P.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 16 - 20 Eylül 2018, cilt.11070, ss.250

IX. **Cardiac MR Motion Artefact Correction from K-space Using Deep Learning-Based Reconstruction**
ÖKSÜZ İ., Clough J. R., Bustin A., Cruz G., Prieto C., Botnar R., Rueckert D., Schnabel J. A., King A. P.
MACHINE LEARNING FOR MEDICAL IMAGE RECONSTRUCTION, MLMIR 2018, Granada, Nikaragua, 16 Eylül 2018, cilt.11074, ss.21-29

X. **AUTOMATIC LEFT VENTRICULAR OUTFLOW TRACT CLASSIFICATION FOR ACCURATE CARDIAC MR PLANNING**
ÖKSÜZ İ., Ruijsink B., Puyol-Anton E., Sinclair M., Rueckert D., Schnabel J. A., King A. P.
2018 IEEE 15TH INTERNATIONAL SYMPOSIUM ON BIOMEDICAL IMAGING (ISBI 2018), Washington, Kiribati, 4 - 07 Nisan 2018, ss.462-465

XI. **Joint myocardial registration and segmentation of cardiac BOLD MRI**
ÖKSÜZ İ., Dharmakumar R., Tsaftaris S. A.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 10 Eylül 2017, cilt.10663, ss.12

XII. **MRI-TRUS Image Synthesis with Application to Image-Guided Prostate Intervention**
Onofrey J., ÖKSÜZ İ., Sarkar S., Venkataraman R., Staib L. H., Papademetris X.
SIMULATION AND SYNTHESIS IN MEDICAL IMAGING, SASHIMI 2016, Athens, Yunanistan, 21 Ekim 2016

XIII. **Towards joint segmentation and registration of the myocardium in CP-BOLD MRI at rest**
ÖKSÜZ İ., Dharmakumar R., Tsaftaris S. A.
Journal of Cardiovascular Magnetic Resonance, 27 - 30 Ocak 2016, cilt.18, ss.34

XIV. **BOLD contrast: A challenge for cardiac image analysis**
ÖKSÜZ İ., Marco B., Mukhopadhyay A., Dharmakumar R., Tsaftaris S. A.
Journal of Cardiovascular Magnetic Resonance, 27 - 30 Ocak 2016, cilt.18, ss.27

XV. **Supervised learning of functional maps for infarct classification**
Mukhopadhyay A., ÖKSÜZ İ., Tsaftaris S. A.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 5 - 09 Ekim 2015, cilt.9534, ss.162

XVI. **Unsupervised Myocardial Segmentation for Cardiac MRI**
Mukhopadhyay A., ÖKSÜZ İ., Marco B., Dharmakumar R., Tsaftaris S. A.
MEDICAL IMAGE COMPUTING AND COMPUTER-ASSISTED INTERVENTION, PT III, Munich, Almanya, 5 - 09 Ekim 2015, cilt.9351, ss.12-20

XVII. **Dictionary Learning Based Image Descriptor for Myocardial Registration of CP-BOLD MR**
ÖKSÜZ İ., Mukhopadhyay A., Marco B., Dharmakumar R., Tsaftaris S. A.
MEDICAL IMAGE COMPUTING AND COMPUTER-ASSISTED INTERVENTION - MICCAI 2015, PT II, Munich, Almanya, 5 - 09 Ekim 2015, cilt.9350, ss.205-213

XVIII. **Data-Driven Feature Learning for Myocardial Segmentation of CP-BOLD MRI**
Mukhopadhyay A., ÖKSÜZ İ., Marco B., Dharmakumar R., Tsaftaris S. A.
FUNCTIONAL IMAGING AND MODELING OF THE HEART (FIMH 2015), Maastricht, Hollanda, 25 - 27 Haziran 2015, cilt.9126, ss.189-197

XIX. **REGION GROWING ON FRANGI VESSELNESS VALUES IN 3-D CTA DATA**
ÖKSÜZ İ., ÜNAY D., KADIPAŞAOĞLU A. K.
2013 21ST SIGNAL PROCESSING AND COMMUNICATIONS APPLICATIONS CONFERENCE (SIU), Türkiye, 24 - 26 Nisan 2013

XX. **Automated Aortic Supravalvular Sinus Detection in Conventional Computed Tomography Image**

ÜNAY D., Harmankaya i., ÖKSÜZ İ., KADIPAŞAOĞLU A. K., ÇUBUK R., ÇELİK L.
2013 21ST SIGNAL PROCESSING AND COMMUNICATIONS APPLICATIONS CONFERENCE (SIU), 24 - 26 Nisan 2013

Desteklenen Projeler

Öksüz İ., Özer C., Yükseköğretim Kurumları Destekli Proje, Explainable Medical Image Quality Analysis, 2022 - Devam Ediyor
Öksüz İ., Gündüz S., UĞURLU U., Yükseköğretim Kurumları Destekli Proje, Electricity Price Forecasting Using Machine Learning, 2022 - Devam Ediyor
Özer C., Öksüz İ., TÜBİTAK Projesi, Interpretable Deep Learning for Fast Medical Image Reconstruction and Analysis, 2020 - 2023
Öksüz İ., Yükseköğretim Kurumları Destekli Proje, Derin Öğrenme Temelli Elektrik Fiyat Tahmini, 2021 - 2022

Metrikler

Yayın: 70
Atıf (WoS): 668
Atıf (Scopus): 1262
H-İndeks (WoS): 13
H-İndeks (Scopus): 17

Akademi Dışı Deneyim

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Yale Üniversitesi