

## Asst. Prof. ELİF BAYKAL KABLAN

### Personal Information

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### International Researcher IDs

ScholarID: TwWPBg4AAAAJ

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Publons / Web Of Science ResearcherID: AAS-4282-2020

Yoksis Researcher ID: 51609

### Education Information

Doctorate, Karadeniz Technical University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, Turkey 2015 - 2020

Postgraduate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği Bölümü, Turkey 2012 - 2015

Undergraduate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği Bölümü, Turkey 2008 - 2012

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Doctorate, Seröz efüzyon sitopatolojisinde makine öğrenmesi tabanlı tanı yaklaşımlarının geliştirilmesi ve uygulanması, Karadeniz Technical University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2020

### Research Areas

Computer Sciences, Artificial Intelligence, Computer Learning and Pattern Recognition, Pattern Recognition and Image Processing, Neural Networks, Engineering and Technology

### Academic Titles / Tasks

Assistant Professor, Karadeniz Technical University, Mühendislik Fakültesi, Yazılım Mühendisliği , 2021 - Continues

Research Assistant, Karadeniz Technical University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2014 - 2021

Research Assistant, Karadeniz Technical University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2012 - 2014

### Academic and Administrative Experience

## Courses

MACHINE LEARNING, Postgraduate, 2022 - 2023

YAPAY ZEKA, Undergraduate, 2022 - 2023

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Skin lesion classification from dermoscopy images using ensemble learning of ConvNeXt models**  
BAYKAL KABLAN E., AYAS S.  
Signal, Image and Video Processing, vol.18, no.8-9, pp.6353-6361, 2024 (SCI-Expanded)
- II. **StainSWIN: Vision transformer-based stain normalization for histopathology image analysis**  
BAYKAL KABLAN E., AYAS S.  
Engineering Applications of Artificial Intelligence, vol.133, 2024 (SCI-Expanded)
- III. **Regional realness-aware generative adversarial networks for stain normalization**  
BAYKAL KABLAN E.  
Neural Computing and Applications, vol.35, no.24, pp.17915-17927, 2023 (SCI-Expanded)
- IV. **Modern convolutional object detectors for nuclei detection on pleural effusion cytology images**  
Baykal E., DOĞAN H., ERCİN M. E., ERSÖZ Ş., EKİNCİ M.  
Multimedia Tools and Applications, vol.79, pp.15417-15436, 2020 (SCI-Expanded)
- V. **Transfer learning with pre-trained deep convolutional neural networks for serous cell classification**  
Baykal E., DOĞAN H., ERCİN M. E., ERSÖZ Ş., EKİNCİ M.  
Multimedia Tools and Applications, vol.79, pp.15593-15611, 2020 (SCI-Expanded)
- VI. **An ensemble of fine-tuned fully convolutional neural networks for pleural effusion cell nuclei segmentation**  
BAYKAL KABLAN E., DOĞAN H., ERCİN M. E., ERSÖZ Ş., EKİNCİ M.  
COMPUTERS & ELECTRICAL ENGINEERING, vol.81, 2020 (SCI-Expanded)
- VII. **A novel 2D and 3D wide-view imaging approach by controlling optimal range for cytopathological analysis in light microscopic system**  
DOĞAN H., BAYKAL KABLAN E., ERCİN M. E., ERSÖZ Ş., EKİNCİ M.  
OPTICS COMMUNICATIONS, vol.430, pp.39-50, 2019 (SCI-Expanded)
- VIII. **A novel extended depth of field process based on nonsubsampling shearlet transform by estimating optimal range in microscopic systems**  
DOĞAN H., BAYKAL KABLAN E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
OPTICS COMMUNICATIONS, vol.429, pp.88-99, 2018 (SCI-Expanded)
- IX. **Microscopic image stitching for cytopathological analysis**  
DOĞAN H., BAYKAL E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
VIRCHOWS ARCHIV, vol.471, 2017 (SCI-Expanded)
- X. **Automated nuclei detection in pleural effusion based on machine learning**  
BAYKAL E., DOĞAN H., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
VIRCHOWS ARCHIV, vol.471, 2017 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Analysis of Data Augmentation Methods for Aortic Valve Calcification Segmentation in Echocardiographic Images**  
KABLAN E. B.

Karadeniz Fen Bilimleri Dergisi, vol.14, no.3, pp.1640-1653, 2024 (Peer-Reviewed Journal)

- II. **Performance comparison of visual transformer based models for shoulder implant classification**  
Baykal Kaban E., KABLAN Y.

Niğde Ömer Halisdemir Üniversitesi Mühendislik Bilimleri Dergisi, vol.13, no.2, pp.704-712, 2024 (Peer-Reviewed Journal)

- III. **Estimation of Optimal Range for Shape From Focus in Microscopic System**

DOĞAN H., BAYKAL KABLAN E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.

International Journal of Engineering Science and Application, vol.5, no.1, pp.27-37, 2021 (Peer-Reviewed Journal)

- IV. **Derin Konvolüsyonel Nesne Algılayıcı ile Plevral Efüzyon Sitopatolojisinde Otomatik Çekirdek Algılama**

Kılıç B., BAYKAL KABLAN E., DOĞAN H., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.

Bilgisayar Bilimleri ve Mühendisliği Dergisi, 2020 (Peer-Reviewed Journal)

- V. **Sitopatolojik Değerlendirme Süreçleri için Optimum Aralığın Korunmasıyla Yüksek Çözünürlüklü Otomatik Panoramik Görüntüleme**

DOĞAN H., BAYKAL E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.

Bilgisayar Bilimleri ve Mühendisliği Dergisi, 2018 (Peer-Reviewed Journal)

- VI. **Blur Invariant Image Forgery Detection Method Using Local Phase Quantization**

ÜSTÜBİOĞLU B., BAYKAL E., MUZAFFER G., ULUTAŞ G.

Journal of Energy and Power Engineering, vol.10, no.6, pp.358-363, 2016 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Automated Aortic Valve Calcific Area Segmentation in Echocardiography Images Using Fully Convolutional Neural Networks**

ÇAKIR M., EKİNCİ M., BAYKAL KABLAN E., ŞAHİN M.

2024 47th International Conference on Telecommunications and Signal Processing (TSP), 10 July 2024, pp.96-100

- II. **Stain independent nuclei segmentation of cytopathology images: A case study in pleural effusion Sitopatoloji görüntülerinde boya bağımsız çekirdek segmentasyonu: Plevral efüzyonda bir olgu çalışması**

Kaban E., DOĞAN H., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.

2019 Medical Technologies Congress, TIPTEKNO 2019, İzmir, Turkey, 3 - 05 October 2019

- III. **Automated Nuclei Detection on Pleural Effusion Cytopathology Images using YOLOv3**

ÇAKIR B., BAYKAL KABLAN E., EKİNCİ M., DOĞAN H., ERCİN M. E., ERSÖZ Ş.

2019 4th International Conference on Computer Science and Engineering (UBMK), 11 - 15 September 2019

- IV. **Automated Nuclei Detection on Pleural Effusion Cytopathology Images using YOLOv3**

Kılıç B., BAYKAL KABLAN E., EKİNCİ M., DOĞAN H., ERCİN M. E., ERSÖZ Ş.

2019 4th International Conference on Computer Science and Engineering (UBMK), 11 - 15 September 2019

- V. **Automated Nuclei Detection on Pleural Effusion Cytopathology Images using YOLOv3**

Kilic B., Baykal E., Ekinic M., Dogan H., Ercin M. E., Ersoz S.

4th International Conference on Computer Science and Engineering, UBMK 2019, Samsun, Turkey, 11 - 15 September 2019, pp.418-422

- VI. **Effects of Other Color Spaces on Shape from Focus**

DOĞAN H., Baykal E., ERCİN M. E., ERSÖZ Ş., EKİNCİ M.

4th International Conference on Computer Science and Engineering, UBMK 2019, Samsun, Turkey, 11 - 15 September 2019, pp.42-46

- VII. **Stain independent nuclei segmentation of cytopathology images: A case study in pleural effusion**

BAYKAL KABLAN E., DOĞAN H., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.

Medical Technologies Congress (TIPTEKNO), İzmir, Turkey, 3 - 05 October 2019, pp.330-333

- VIII. **Generation of Optimal Focused 2D and 3D Images for Cytopathological Analysis in Light Microscopic Systems**

DOĞAN H., BAYKAL KABLAN E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.

Medical Technologies Congress (TIPTEKNO), İzmir, Turkey, 3 - 05 October 2019, pp.275-278

- IX. **Automated nuclei detection in serous effusion cytology with stacked sparse autoencoders Seröz Efüzyon Sitolojisinde Yiğınlanmış Seyrek Oto-Kodlayıcılar ile Otomatik Çekirdek Algılama**  
Baykal E., Dogan H., ERCİN M. E., ERSÖZ Ş., Ekinci M.  
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- X. **3D panoramic imaging for cytopathological analysis in light microscopic system**  
DOĞAN H., BAYKAL E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
2018 26th Signal Processing and Communications Applications Conference (SIU), 2 - 05 May 2018
- XI. **Automated Nuclei Detection in Serous Effusion Cytology with Stacked Sparse Autoencoders**  
BAYKAL KABLAN E., DOĞAN H., ERCİN M. E., ERSÖZ Ş., EKİNCİ M.  
26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
- XII. **Image panorama without loss of focusing for microscopic systems**  
DOĞAN H., Baykal E., EKİNCİ M.  
2nd International Conference on Computer Science and Engineering, UBMK 2017, Antalya, Turkey, 5 - 08 October 2017, pp.135-140
- XIII. **Determination of Optimum Auto Focusing Function for Cytopathological Assessment Processes**  
DOĞAN H., BAYKAL E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
Medical Technologies National Congress (TIPTEKNO), Trabzon, Turkey, 12 - 14 October 2017
- XIV. **Microscopic image stitching for cytopathological analysis**  
DOĞAN H., BAYKAL E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
29th European Congress of Pathology, 2 - 06 September 2017, vol.471
- XV. **Automated nuclei detection in pleural effusion based on machine learning**  
BAYKAL E., DOĞAN H., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
29th European Congress of Pathology, 2 - 06 September 2017, vol.471
- XVI. **Automated Nuclei Detection in Serous effusion Cytology Based on Machine Learning**  
BAYKAL E., DOĞAN H., ERCİN M. E., ERSÖZ Ş., EKİNCİ M.  
2017 25th Signal Processing and Communication Application Conference (SIU), 15 - 18 May 2017
- XVII. **Optimal Focusing with Extended Depth of Focus in Microscopic Systems**  
DOĞAN H., BAYKAL KABLAN E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- XVIII. **Automated cell nuclei segmentation in pleural effusion cytology using active appearance model**  
Baykal E., DOĞAN H., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
17th International Conference on Computer Analysis of Images and Patterns, CAIP 2017, Ystad, Sweden, 22 - 24 August 2017, pp.59-69
- XIX. **Determination of Optimum Auto Focusing Function for Cytopathological Assessment Processes**  
DOĞAN H., BAYKAL KABLAN E., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
Medical Technologies National Congress (TIPTEKNO), Trabzon, Turkey, 12 - 14 October 2017
- XX. **Automated Nuclei Detection in Serous Effusion Cytology based on Machine Learning**  
BAYKAL KABLAN E., DOĞAN H., EKİNCİ M., ERCİN M. E., ERSÖZ Ş.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- XXI. **Image Forgery Detection based on SIFT and k-means plus**  
BAYKAL KABLAN E., ÜSTÜBİOĞLU B., ULUTAŞ G.  
39th International Conference on Telecommunications and Signal Processing (TSP), Vienna, Austria, 27 - 29 June 2016, pp.474-477
- XXII. **Extraction of Unrestricted Palm Patterns in a 3D Environment and Its Application in Biometrics**  
BAYKAL KABLAN E., EKİNCİ M.  
23rd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.1749-1752
- XXIII. **Unrestricted Pattern Selection in Contact less Palmprint Identification Systems**

BAYKAL KABLAN E., EKİNCİ M.

22nd IEEE Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, 23 - 25 April 2014, pp.1885-1888

## Supported Projects

Baykal Kaban E., Ayas S., Baykal Selçuk L., Aksu Arıca D., TUBITAK Project, Kozmetik Dermatolojide Botoks Enjeksiyon Noktalarının Otomatik Tespiti için Derin Öğrenme Tabanlı Yaklaşımların Gelistirilmesi Ve Uygulanması, 2024 - 2026  
Ekinci M., Baykal Kaban E., Şahin M., TUBITAK Project, Aort Kapak Kalsiyum Skorunun Ekokardiyografik Görüntülerden Otomatik Tespiti ve Ölçümü için Derin Öğrenmeye Dayalı Tam Otomatik Bir Yaklaşımın Gelistirilmesi ve Uygulanması, 2022 - 2025

Ekinci M., Baykal Kaban E., Şahin M., TUBITAK Project, Aort Kapak Kalsiyum Skorunun Ekokardiyografik Görüntülerden Otomatik Tespiti ve Ölçümü için Derin Öğrenmeye Dayalı Tam Otomatik Bir Yaklaşımın Gelistirilmesi ve Uygulanması, 2022 - 2025

Ayas S., Baykal Kaban E., Ekinci M., TUBITAK Project, Görü Dönüştürücülerine Dayalı Medikal Görüntü Sınıflandırmasında Çekişmeli Makine Öğrenmesi Yaklaşımlarının Geliştirilmesi, 2022 - 2024

Ekinci M., TUBITAK Project, Malign Neoplazi ve Reaktif Mezotel Hiperplazisinin Bilgisayar Destekli Sitopatolojik Ayırıcı Tanısı Amaçlı Bilgisayarlı Görme ve Makine Öğrenmesi Tabanlı Otomatik Işık Mikroskopu Tarama ve Analizi, 2018 - 2021

## Scientific Refereeing

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, January 2024

BIOMEDICAL SIGNAL PROCESSING AND CONTROL, Journal Indexed in SCI-E, October 2023

Karadeniz Fen Bilimleri Dergisi, National Scientific Refreed Journal, September 2023

BIOMEDICAL SIGNAL PROCESSING AND CONTROL, Journal Indexed in SCI-E, July 2022

SIU, Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Conference Paper (Full Text), April 2022

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, February 2022

COMPUTERS IN BIOLOGY AND MEDICINE, Journal Indexed in SCI-E, January 2022

BIOMEDICAL SIGNAL PROCESSING AND CONTROL, Journal Indexed in SCI-E, January 2022

TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, Journal Indexed in SCI-E, June 2021

SIU, Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Conference Paper (Full Text), April 2021

## Metrics

Publication: 45

Citation (WoS): 54

Citation (Scopus): 100

H-Index (WoS): 4

H-Index (Scopus): 5

## Congress and Symposium Activities

IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Attendee, Malatya, Turkey, 2015

IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Attendee, Trabzon, Turkey, 2014