



Elif MESECI

AI Specialist ,
Research Assistant



EDUCATION

Master of Science Computer Engineering

2021 - 2023

Karabuk University

I have developed deep learning and machine learning based projects. My thesis, titled 'Ensemble Learning-Based Approach to Classification of Sar Images for Land Cover and Land Use' was supported by the Scientific Research Projects Unit of the University. I also made an oral presentation at the 9th International Engineering and Natural Sciences Conference (ICENS 2023) held in Bosnia and Herzegovina, by making a statement about my thesis.

Bachelor Degree Computer Engineering

2016 - 2021

Karabuk University

I participated in programming language courses as a laboratory assistant. As a member of the board of directors of the Information Technologies Club, which is the student community of the university, I organized various events. My undergraduate thesis titled Analysis of Panoramic Dental Images Using Artificial Learning Techniques received support from TUBITAK. In addition, I completed my undergraduate period by publishing an abstract and a full-text article in the field of "Artificial Intelligence in Health".

WORK EXPERIENCE

Research Assistant

Feb 2022 - Present

Zonguldak Bulent Ecevit University | Department of Computer Engineering

In courses on programming languages and data structures, I worked as a laboratory assistant. I also developed a C# console project that grading in order to evaluate the practical skills of my students in lab. I kept working on deep learning-based projects while pursuing my master's degree in order to meet the requirements of the industry and healthcare organizations.

Artificial Intelligence Specialist

Nov 2021 - Present

SimurgAI

I developed a project using deep learning and machine learning models for image classification and segmentation. I applied various optimizations to evaluate and improve the performance of projects developed in the field of artificial intelligence.

Artificial Intelligence Developer

Oct 2020 - Nov 2021

SimurgAI

I analyzed the existing deep learning solutions by scanning the literature on related studies. I contributed to the application and development of deep learning methods for medical image segmentation.

PAPERS

- C. Ozcan, E. Meseci, D. Ozdemir, M. Dilmac, DenseNet-Based Ensemble Network for Land Cover and Land Use Classification of Patch-Based Denoised SAR Images, 2023. (Submitted to the journal)
- D. Ozdemir, E. Ozkaynak, M. Dilmac, E. Meseci, Complex Network Analysis on PDC World Darts Championships, ICONDATA'22 Proceedings Book, 1, 142-147, 2022.
- E. Meseci, E. Ozkaynak, M. Dilmac, D. Ozdemir, Neighborhood-Based Link Prediction on PDC World Darts Championship Complex Networks, ICONDATA'22 Proceedings Book, 1, 148-153, 2022.
- A. Karaoglu, C. Ozcan, A. Pekince, Y. Yasa, B.Y. Tekin, D. Ozdemir, E. Meseci, Dental restorations detection and segmentation in panoramic images: A deep learning approach based on Mask R-CNN, 2022. (Submitted to the journal)
- B.Y. Tekin, C. Ozcan, A. Pekince, Y. Yasa, A. Karaoglu, S. Cilek, D. Ozdemir, E. Meseci, Tooth Detection and Numbering with Instance Segmentation in Panoramic Radiographs, International Conference on Interdisciplinary Applications of Artificial Intelligence (ICIDAAI), 1st, Online, 21-23 May, 2021.
- A. Karaoglu, C. Ozcan, A. Pekince, Y. Yasa, E. Meseci, S. Cilek, Segmentation of Bitewing Intraoral X-Ray Images with Mask R-CNN Deep Learning Model, II. International Artificial Intelligence in Health Congress 2021, SS-125,16-18 Nisan, 2021.

PROJECTS

Autosomal Dominant Polycystic Kidney Disease Magnetic Resonance Imaging-Based Artificial Intelligence Decision Support System

(Karabuk University | June 2023 -)

- A new and unique AI-based decision support system software is being developed to be used in kidney volume measurements in ADPKD cases and to guide the follow-up-treatment process. Polycystic kidneys will be segmented with 3D U-Net and UX-Net architectures and high performance will be achieved with voting method and improvement methods.

Deep Learning Based Artificial Intelligence Software for Incidental Kidney Cancer Screening and Diagnosis

(Karabuk University | June 2023 -)

- An artificial intelligence supported system is being developed that reduces the workload and cost in 3D CT interpretation, increases the access of patients to early diagnosis and treatment, and detects kidney cancer in CT images. High success will be achieved by segmenting the images with the 3D U-Net model and then utilizing the classification performance with the Mask R-CNN model.

Development of Deep Learning Based Software for Early Diagnosis and Treatment of Diseases In Panoramic Radiographs Used In Dentistry

(SimurgAI | June 2023 -)

- Deep learning-based software is being developed for the early diagnosis and treatment of dental diseases by automatic segmentation in panoramic radiographs. The software achieves high success by using both labeled and unlabeled data using a semi-supervised learning approach.

Ensemble Learning-based Approach to Classification of SAR Images for Land Cover and Land Use

(Karabuk University | Sep. 2022 -)

- A strong network structure based on ensemble learning method has been established for the classification of SAR images. For each deep learning model included in the ensemble learning method, the layers were examined and modified to optimize. The performance of the classification network has been enhanced by image processing methods and fine tuning processes.

Land Cover and Land Use Classification of Patch-based Denoised SAR Images

(Karabuk University | Sep. 2022 - May 2023)

- The performance improvement on the deep learning model was examined by applying the despeckle filter on the SAR images.

Complex Network Analysis on PDC World Darts Championships

(Karabuk University | 2022)

- A network structure was created based on the world darts championships organized by the Professional Darts Organization (PDC) between 1994 and 2022. It has been investigated whether the created network carries the complex network principles and the structural relations that are visualized.

Neighborhood-Based Link Prediction Methods on PDC World Darts Championship Complex Network

(Karabuk University | 2022)

- Neighborhood-based link prediction methods are used on networks consisting of different time periods were created based on the interaction between the players and the data obtained from the matches in the world darts championship held by the Professional Darts Corporation (PDC) between 1994 and 2022.

Caries Detection on Radiographs using Deep Learning Classification algorithms

(SimurgAI | 2021-)

- Radiographic diagnosis of dental caries should always be supported by a careful clinical examination. In this study, high accuracy dental caries detection is provided by using deep learning classification algorithms in panoramic x-ray images.

Analysis of Panoramic Dental Images using Artificial Learning Techniques

(SimurgAI | 2020- 2021)

- In order to reduce the workload of dentists, artificial intelligence supported dental radiography analysis is performed. In the study, FDI numbers and tooth types were segmented with Mask R-CNN, making it easier for dentists to obtain preliminary information about the patient. The performance of the model was evaluated with the analysis tools provided by the Tensorflow library.

Segmentation of Bitewing Intraoral X-ray Images with Mask R-CNN Deep Learning Model

(SimurgAI | 2020 - 2021)

- Segmentation task is provided for the detection of recurrent caries that cannot be seen directly in the mouth, especially at the interface of small and large molars and under the restorations.

Classification of Wrist Images with Deep Learning Models

(Medathon | 2021)

- VGG, AlexNet, ResNet were used with Hand Wrist W-Ray images submitted the under the competition. Classification performance has been increased by changing and improving the parameters using the transfer learning method.

SKILLS

- C, C#, Java, Python, PHP
- TensorFlow, Keras, PyTorch, OpenCV
- NumPy, Matplotlib, Pandas, Seaborn, Scikit-Learn
- JSON, XML
- Git, AWS, Azure
- Matlab

REFERENCES

Assoc. Prof. Dr. Caner OZCAN ✉ 📞

SimurgAI / CEO

Cahit Berkay KAZANGIRLER ✉ 📞

UIBEE / CEO

Muhammet DILMAC ✉ 📞

BuckAI / Software Engineer

Buse Yaren TEKIN ✉ 📞

AI Specialist

Dilara OZDEMIR ✉ 📞

Mitsubishi Electric Innovation Center/
UI/UX Designer

Süheda AKDAG ✉ 📞

ML Engineer