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İstanbul, Turkey
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Berkin Deniz Kahya

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Skills

Tools and Languages Python, Git, PyTorch, TF & Keras, OpenCV, Cuda, MLflow, Docker, MongoDB, C & C++, Matlab, SQL

(at least intermediate)

Research Interest & Areas Medical Image Processing & Segmentation, Scene generation in motion pictures, Mathematical Modeling and Visualization with Manim

Communication Turkish, English

Published

Papers & Studies

- An ensemble deep learning approach to detect tumors on Mohs micrographic surgery slides.
- Cross-Lingual Phonetic Distance Learning via Transliteration Pairs, presented at IEEE SIU 2025 Conference, paper

Technical Experience

Research Engineer *02/25 - Present/*

Huawei

- Article on measuring phonetic distance between cross-lingual character pairs, at IEEE SIU 2025 Conference.
- 1% improvement to accuracy in ranking pipeline via the addition of phonetic feature
- 2% improvement to translation accuracy on queries belonging Cyrillic and Arabic alphabets.
- Augmentation of queries via recall strategies on translation dictionaries.

AI Researcher & Engineer *10/23 - 10/24*

Mogram

- Mass & Tumour & Calcification segmentation with various encoder-decoder networks.
- Used patch-based transformer encoder-decoder network to enhance f1 and box f1 scores by around 10%.
- R&D of the segmentation training pipeline with MLflow.
- Combined SLIC algorithm with adaptive thresholding to gain roughly 10x speed over CPU-bound processes.
- Design of on-premise service authentication and encryption routines.
- Anonymization of the DICOM file structure and organization of datasets.
- Resolved Docker and MongoDB issues in a remote setup.

AI Team Member & Participant & Lecturer *~ 02/21 - Present*

Inzva

- Design and tracking of learning materials as a member of the AI Team.
- Gave lectures on Structures of ML projects and Computer Vision Fundamentals.
- Google Tensorflow Developer & DL Specialization certificates.
- Worked with Mamba architecture on State Space Tracking/Modelling of Transformer-based LLMs.
- Application of various deep learning models and study programs to solve real-life and designed challenges for peer learning.

AI Research Student *06/22 - 10/23*

ASIL Laboratories

- Dataset creation, labelling & preprocessing of medical histopathology images.
- Segmentation for pixel-wise tumour detection, f1 over 70% with unified resampling for post-processing.
- Image augmentation techniques with Autoencoder and Diffusion models
- Published abstract on arxiv.

Machine Learning Intern *07/22 - 08/22*

Optiwisdom

- Integration of the customer database into NoSql.
- Various ML methods (boosting & tree algorithms) for revenue prediction.

Other Study

- Worked on 3D car localization with sensor fusion and YOLO
- Building an autonomous microscope to classify fungi cells for the graduation project.
- Deep Learning Specialization courses and certificate by Andrew Ng.
- Tensorflow Developer courses and certificate by Laurence Moroney.

Education

MSc Computer Sciences, Istanbul Technical University, GPA: ../4.00 07/25 - Present
Mechatronics Engineering Grad, Yıldız Technical University, GPA: 3.04/4.00 09/19 - 12/24

Interests & Studies

Self study projects

- Basic chess game and a user interface using Python.
- Worked on creating a chess bot using alpha-beta pruning.
- Visualizing signals using Laplace Transformation with manim library on Python.
- Training of UNet/SwinUnetR architecture on the Skin Lesion Segmentation dataset.