MEHMET YİĞİT AVCI

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EDUCATION

King's College London — *Oct. 2024 – Oct. 2028*
PhD
Department of Biomedical Engineering and Imaging Sciences

TECHNICAL UNIVERSITY OF MUNICH — *Oct. 2022 – Oct. 2024*
Master of Science
Biomedical Computing / Faculty of Informatics

BOGAZICI UNIVERSITY — *Sep. 2017 – Jun. 2022*
Bachelor of Science
Electrical and Electronics Engineering

RESEARCH & TEACHING EXPERIENCE

TUM & Harvard, Supervisors: Prof. Julia Schnabel, Prof. Berkin Bilgic — *Mar. 2024 - Nov. 2024*
Master Thesis
- Worked on self supervised distortion-free dMRI reconstruction with zero-shot self supervised learning

TUM COMPAI Lab, Supervisor: Prof. Julia Schnabel — *Mar. 2023 - Mar. 2024*
Research Intern
- Worked on unsupervised representation learning for detection and localization for Alzhemier's Disease

Bogazici University EE 304, Supervisor: Prof. Alpay Özcan — *Mar. 2022 - Jun. 2022*
Undergraduate Teaching Assistant

VAVlab, Supervisor: Prof. Burak Acar — *Sep. 2021 - Jun. 2022*
Senior Year Project
- Worked on a novel method for deep non-negative matrix factorization of face images for recognition and brain connectomes for classification of Alzhemier's Disease according to severity

Harvard-MIT Health Sciences & Technology
MGH Martinos Center for Biomedical Imaging
Supervisor: Dr. Qiyuan Tian, Prof. Berkin Bilgic — *Apr. 2021 - Sep. 2023*
Research Assistant
- Worked on a novel dropout + averaging strategy that allows for quantifying uncertainty and training networks with very limited amounts of data for quantitative imaging

HONORS AND ACHIEVEMENTS

Best Paper Award, MICCAI EMERGE Workshop (co-first authored paper)	*2024*
Ranked 4th in QUAD (MICCAI)'22 challenge	*2022*
ISMRM Annual Conference Trainee Stipend	*2022*
High honors graduate of Bogazici University	*2022*
Ranked 3rd among 0.2 million candidates in the postgraduate education exam ALES (Turkish GRE)	*2022*
Ranked 117th among 1.6 million candidates in the Nationwide University Entrance Exam (YGS)	*2017*

JOURNAL PAPERS

-Christiane Posselt, **Mehmet Yigit Avci**, Mehmet Yigitsoy, Patrick Schünke, Christoph Kolbitsch, Tobias Schäffter, Stefanie Remmele, "Simulation of acquisition shifts in T2w FLAIR MR images to stress test AI segmentation networks", **Journal of Medical Imaging, 2024**

-Aja-Fernandez, ... **Avci, Mehmet Yigit**, ..., Pieciak, Tomasz, "Validation of Deep Learning Techniques for Quality Augmentation in Diffusion MRI for Clinical Studies", **NeuroImage:Clinical, 2023**

CONFERENCE ABSTRACTS & POSTERS

-**Mehmet Yigit Avci**, Jaejin Cho, Yohan Jun, Berkin Bilgic, "Zero-shot Self-Supervised Distortion-Free Diffusion MRI", **preprint, 2024**

-**Mehmet Yigit Avci**, Emily Chan, Veronika Zimmer, Daniel Rückert, Benedikt Wiestler, Julia Schnabel, Cosmin Bercea, "Unsupervised Analysis of Alzheimer's Disease Signatures using 3D Deformable Autoencoders" ", **MICCAI EMERGE Workshop 2024 - Best Paper Award** (Oral Presentation)

-Christiane Posselt, **Mehmet Yigit Avci**, Mehmet Yigitsoy, Patrick Schünke, Christoph Kolbitsch, Tobias Schäffter, Stefanie Remmele, "NeuroTEST - How do image acquisition shifts affect SOTA MS lesion segmentation models?", **MedizinTechnik Postersymposium 2023** (Poster)

-Aja-Fernandez, ... **Avci, Mehmet Yigit**, ..., Pieciak, Tomasz, "Validation of Deep Learning Techniques for Quality Augmentation in Diffusion MRI for Clinical Studies" , **ISMRM, 2023**

-**Mehmet Yigit Avci**, Ziyu Li, Qiuyun Fan, Susie Huang, Berkin Bilgic, Qiyuan Tian, "Quantifying the uncertainty of neural networks using Monte Carlo dropout for deep learning based quantitative MRI", **ISMRM, 2022** (oral Power Pitch presentation)

RELEVANT SKILLS

Languages:	Python, C/C++, MATLAB, SQL
Libraries:	NumPy/SciPy, Pytorch, Tensorflow, MONAI, OpenCV, ROS
Other :	Linux OS, Docker, Kubernetes, LaTeX, PowerBI

WORK EXPERIENCE

deepc *Sep. 2022 - Oct. 2024*
Machine Learning R&D Intern
- Worked on body part classification problems for different imaging modalities
- Worked on MS Lesion segmentation with SoA models
- Helped the team dockerizing and running the models in cloud with Kubernetes structure
- Benchmarking and analysis of NLP models

ASELSAN *Aug. 2021 - Sep. 2021*
Computer Vision R&D Working Student
- Worked on project regarding object detection and tracking with drone
- Mainly focused on object detection and deep learning algorithms using OpenCV and PyTorch
- Used TensorRT on Jetson Xavier NX for high-performance runtime and ROS for communication with drone

Borusan EnBW Energy *Jan. 2021 - July 2021*
Data Analysis and Algorithm Intern
- Helped team about wind-hydro power data storage and interpretation using Python/NumPy and SQL
- Helped team about automatization of performance reports using PowerBI

Turkcell *June 2020 - Dec. 2020*
Data Network Intern
- Helped team regarding switch and router configurations, IP address operations with Python scripts
- Awarded second place in project competition between interns with project titled 'Predictive Maintenance for Turkcell'

RELATED COURSEWORK

TUM

Machine Learning - Introduction to Deep Learning - Medical Instrumentation and Computer Aided Surgery - Computer Aided Medical Procedures - Biomedical Physics - AI in Medicine - Unsupervised Anomaly Segmentation

Bogazici University

AI in Healthcare - Introduction to Image Processing - Machine Vision - Data Mining for Visual Media - Probability