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 EXPERIENCE

KCL, Supervisor: Dr. Jorge Cardoso, Prof. Sebastien Ourselin *Nov. 2024 - Oct. 2028*
PhD Research
- Working on representation learning for radiology data, exploiting Vision-Language models

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

VAVlab, Supervisor: Prof. Burak Acar *Sep. 2021 - Jun. 2022*
Senior Year Project
- Worked on deep 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

TEACHING EXPERIENCE

Computer Programming, King's College London *2025*
Graduate Teaching Assistant

Advanced Machine Learning, King's College London *2024*
Graduate Teaching Assistant

Signal and Image Processing, King's College London *2024, 2025*
Graduate Teaching Assistant

Energy Conversion, Bogazici University *2022*
Undergraduate Teaching Assistant

ACHIEVEMENTS & HIGHLIGHTS

TUBITAK 2213-A Overseas Graduate Scholarship (46,000$) *2025-2027*
ISMRM Annual Conference Trainee Stipend (500$) *2022, 2025*
Reviewer for ISMRM *2025*
Best Paper Award, MICCAI EMERGE Workshop *2024*
Ranked 4th in QUAD (MICCAI)'22 challenge *2022*
High honors graduate of Bogazici University *2022*
Ranked 3th 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 PAPERS & ABSTRACTS

- -**Mehmet Yigit Avci**, Pedro Borges, Virginia Fernandez, Paul Wright, Mehmet Yigitsoy, Sebastien Ourselin, Jorge Cardoso, "DIST-CLIP: Arbitrary Metadata and Image Guided MRI Harmonization via Disentangled Anatomy-Contrast Representations", **Under Review for MIDL**

-**Mehmet Yigit Avci**, Pedro Borges, Virginia Fernandez, Paul Wright, Mehmet Yigitsoy, Sebastien Ourselin, Jorge Cardoso, "Metadata-Aligned 3D MRI Representations for Contrast and Sequence Understanding", **Under Review for ISBI**

-**Mehmet Yigit Avci**, Pedro Borges, Virginia Fernandez, Paul Wright, Mehmet Yigitsoy, Sebastien Ourselin, Jorge Cardoso, "Metadata-Aligned 3D MRI Representations for Contrast and Sequence Understanding", **EurIPS: MedEurIPS Workshop 2025** (Spotlight) - *non archival*

-**Mehmet Yigit Avci**, Pedro Borges, Paul Wright, Mehmet Yigitsoy, Sebastien Ourselin, Jorge Cardoso, "MR-CLIP: Efficient Learning of Contrast Representations From DICOM Metadata and Image Pairs", **MICCAI MLMI 2025** (Oral Presentation)

-**Mehmet Yigit Avci**, Jaejin Cho, Yohan Jun, Berkin Bilgic, "Zero-Shot Self-Supervised Distortion-Free Diffusion MRI Reconstruction", **ISMRM, 2025** (Poster)

-**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)

WORK EXPERIENCE

deepc *Sep. 2022 - Oct. 2024*
Machine Learning R&D Working Student
- Worked on body part classification problems for different imaging modalities
- Worked on MS Lesion segmentation with SoA models

- Helped the team containerizing and running the models in cloud with Docker & Kubernetes frameworks
- Benchmarking and analysis of NLP models

ASELSAN *Aug. 2021 - Sep. 2021*

Computer Vision R&D Intern

- 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’