

# MEHMET YİĞİT AVCI

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## EDUCATION

<b>King's College London</b> <i>PhD</i> <i>Department of Biomedical Engineering and Imaging Sciences</i>	<i>Oct. 2024 – Oct. 2028</i>
<b>TECHNICAL UNIVERSITY OF MUNICH</b> <i>Master of Science</i> <i>Biomedical Computing / Faculty of Informatics</i>	<i>Oct. 2022 – Oct. 2024</i>
<b>BOGAZICI UNIVERSITY</b> <i>Bachelor of Science</i> <i>Electrical and Electronics Engineering</i>	<i>Sep. 2017 – Jun. 2022</i>

## RESEARCH EXPERIENCE

<b>KCL, Supervisor: <a href="#">Dr. Jorge Cardoso</a>, <a href="#">Prof. Sebastien Ourselin</a></b> <i>PhD Research</i> - Working on representation learning for radiology data, exploiting CLIP-based Vision-Language models	<i>Nov. 2024 - Oct. 2028</i>
<b>TUM &amp; Harvard, Supervisors: <a href="#">Prof. Julia Schnabel</a>, <a href="#">Prof. Berkin Bilgic</a></b> <i>Master Thesis</i> - Worked on self supervised distortion-free dMRI reconstruction with zero-shot self supervised learning	<i>Mar. 2024 - Nov. 2024</i>
<b>TUM COMPAI Lab, Supervisor: <a href="#">Prof. Julia Schnabel</a></b> <i>Research Intern</i> - Worked on unsupervised representation learning for detection and localization for Alzheimer's Disease	<i>Mar. 2023 - Mar. 2024</i>
<b>VAVlab, Supervisor: <a href="#">Prof. Burak Acar</a></b> <i>Senior Year Project</i> - Worked on deep matrix factorization of face images for recognition and brain connectomes for classification of Alzheimer's Disease according to severity	<i>Sep. 2021 - Jun. 2022</i>
<b>Harvard-MIT Health Sciences &amp; Technology</b> <b><a href="#">MGH Martinos Center for Biomedical Imaging</a></b> <b>Supervisor: <a href="#">Dr. Qiyuan Tian</a>, <a href="#">Prof. Berkin Bilgic</a></b> <i>Research Assistant</i> - Worked on a novel dropout + averaging strategy that allows for quantifying uncertainty and training networks with very limited amounts of data for quantitative imaging	<i>Apr. 2021 - Sep. 2023</i>

## TEACHING EXPERIENCE

<b>Advanced Machine Learning, King's College London</b> <i>Graduate Teaching Assistant</i>	<i>Jan. 2025 - Mar. 2025</i>
<b>Signal and Image Processing, King's College London</b> <i>Graduate Teaching Assistant</i>	<i>Jan. 2025 - Mar. 2025</i>
<b>Energy Conversion, Bogazici University</b> <i>Undergraduate Teaching Assistant</i>	<i>Mar. 2022 - Jun. 2022</i>

## ACHIEVEMENTS & HIGHLIGHTS

ISMRM Annual Conference Trainee Stipend	2022, 2025
Reviewer for ISMRM	2025
Best Paper Award, MICCAI EMERGE Workshop	2024
<a href="#">Ranked 4th in QUAD (MICCAI)'22 challenge</a>	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, Paul Wright, Mehmet Yigitsoy, Sebastien Ourselin, Jorge Cardoso, "MR-CLIP: Efficient Learning of Contrast Representations From DICOM Metadata and Image Pairs", **MICCAI MLMI 2025**

-**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 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'