

Karahan Yilmazer

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EDUCATION

Elite Master of Science in Neuroengineering

Technical University of Munich [🔗](#)

10.2022 – present

Munich, Germany

- Tentative overall grade: 1.3*
- Student representative
- Deutschlandstipendium (German scholarship) recipient

Elite Master of Science in Neuro-Cognitive Psychology

Ludwig Maximilian University of Munich [🔗](#)

10.2022 – 09.2024

Munich, Germany

- Tentative overall grade: 1.7
- Thesis topic: **Closed-Loop Amplitude-Modulated Transcranial Alternating Current Stimulation (CLAM-tACS) on Motor Cortical Oscillations**

Master of Science in Electrical and Computer Engineering

Technical University of Munich [🔗](#)

04.2022 – present

Munich, Germany

- Tentative overall grade: 1.7

Bachelor of Science in Electrical and Computer Engineering

Technical University of Munich [🔗](#)

10.2018 – 02.2022

Munich, Germany

- Overall grade: 2.2
- Thesis topic: **Eye Blink Detection and Motor Imagery Using A Wireless EEG: An Investigation**, Grade: 1.3

* In the German grading system, grades range from 1.0 (very good) to 5.0 (fail).

RESEARCH EXPERIENCE

Prof. Dr. Saad Jbabdi & Hossein Rafipoor [🔗](#)

Wellcome Centre for Integrative Neuroimaging, University of Oxford

09.2024 – present

Oxford, United Kingdom

- Modeled fMRI data using **Dynamic Causal Modeling**.
- **Identified failure points** in parameter estimation using model inversion.
- **Applied BENCH (Bayesian EstimatiON of CHange)** to improve model inversion.

Prof. Surjo R. Soekadar & Annalisa Colucci [🔗](#)

Clinical Neurotechnology Lab, Charité

03.2024 – 09.2024

Berlin, Germany

- Optimized the CLAM-tACS system for **targeting sensorimotor beta oscillations**.
- Compared various **spatial filters for EEG source extraction**.
- Developed an **automatic algorithm for individualized frequency range detection**.
- **Developed a new spatial filter** leveraging mu and beta co-information, termed Joint Spatio-Spectral Decomposition (JSSD).

Prof. Surjo R. Soekadar & Jan Zerfowski [🔗](#)

Clinical Neurotechnology Lab, Charité

08.2023 – 03.2024

Berlin, Germany

- **Classified rock-paper-scissors gestures** using **optically pumped magnetometers**.
- Performed **EEG source localization** using co-registered anatomical MRI.

Prof. Simon Jacob & Prof. Moritz Grosse-Wentrup [🔗](#)

Translational NeuroTechnology Laboratory, Technical University of Munich

03.2022 – 04.2022

Munich, Germany

- Prepared experimental setup for the **Brain-AI interface project** involving an **aphasia patient** awaiting **Utah array implantation**.
- Explored **spike sorting pipelines** for future neural data processing.

Prof. Gordon Cheng & Nicolas Berberich [✉](#)

Institute for Cognitive Systems, Technical University of Munich

05.2021 – 07.2021

Munich, Germany

- Designed and tested **assistive home appliances** for a **spinal cord injury patient**.
- Conducted **motor imagery** recordings and data analysis.
- Implemented **real-time eye blink detection** for peripheral device control using EEG.
- Developed an **automatic pipeline to assess EEG signal quality**.

Prof. Ata Akın [✉](#)

Acibadem University

10.2020

Istanbul, Turkey

- Performed statistical analysis of **Stroop test** results.

Prof. Moritz Grosse-Wentrup [✉](#)

Research Group Neuroinformatics, University of Vienna

10.2019

Vienna, Austria

- Set up **research-grade wet EEG systems** newly arrived to the lab.

PROFESSIONAL EXPERIENCE

UX Designer

12.2023 – present

Q4U [✉](#)

Remote

- **Designed client-focused websites** optimized for user experience.
- Built **recommendation systems** for large websites using **machine learning**.
- Developed cross-platform **mobile apps** using Flutter.
- Investigated the **role of EEG** as a tool for **measuring user engagement**.

Teaching Assistant

04.2021 – 08.2024

Technical University of Munich

Munich, Germany

- **Taught various courses** including Human-Centered Neuroengineering, Neuroprosthetics, Biosignal Processing, Python and C++ Workshops, and more.

COMPETITIONS

BrainAge Prediction Challenge [✉](#)

11.2022

NeurotechX Hackathon

Remote

- **Predicted brain age** from resting-state EEG data.
- Achieved **1st and 3rd place** as part of a collaborative team.

BCI & Neurotechnology Spring School [✉](#)

04.2021

g.tec medical engineering GmbH

Remote

- Developed a **two-person motor imagery-based EEG-BCI** for video game control.
- Awarded **3rd place in the BR41N.IO Hackathon**.

PUBLICATIONS

Grip Force Dynamics during Exoskeleton-Assisted and Virtual Grasping [✉](#)

09.2023

International Conference on Rehabilitation Robotics (ICORR)

Investigating the relationship between cue immersion and the strength of motor imagery during hand and wrist movements [✉](#)

04.2023

11th International IEEE/EMBS Conference on Neural Engineering (NER)

LANGUAGES & SKILLS

Turkish (Native)

English (C1)

German (C1)

Norwegian (A2)

Programming

- Python
- MATLAB
- C++
- C
- Flutter
- GitHub

Neuroengineering

- EEG Analysis (MNE, EEGLAB)
- LabStreamingLayer
- Experimental design (PsychoPy)
- Microcontroller programming

Machine Learning

- Scikit-Learn
- PyTorch
- TensorFlow
- Recommendation systems

Creative Skills

- 3D modeling
 - Blender
 - Fusion 360
- Figma
- Photography