Karahan Yılmazer

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EDUCATION

10.2022 – present
Munich, Germany

Technical University of Munich, *Elite Master of Science in Neuroengineering*

- Tentative overall grade: 1.4*****
- Student representative
- Deutschlandstipendium recipient (WS 23/24)

10.2022 – present
Munich, Germany

Ludwig Maximilian University of Munich,
Elite Master of Science in Neuro-Cognitive Psychology

- Tentative overall grade: 1.4

04.2022 – present
Munich, Germany

Technical University of Munich, *Master of Science in Electrical and Computer Engineering*

- Tentative overall grade: 1.7

10.2018 – 02.2022
Munich, Germany

Technical University of Munich,
Bachelor of Science in Electrical and Computer Engineering

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

04.2021
Virtual

BCI & Neurotechnology Spring School, *g.tec medical engineering GmbH*

- Attended lectures about various topics from **brain research**
- Attended the **BR41N.IO Hackathon**
  - Developed a competitive multiplayer video game using **EEG-based BCI using motor imagery** and Python
  - Rewarded with **3rd place for programming projects**

08.2020 – 12.2020
Virtual

Norwegian University of Science and Technology, *Exchange Semester*

- **Introduction to Neuroscience**, Grade: A
  - Presentation topic: **Emergent Properties of Neuronal Networks**

02.2013 – 05.2018
Istanbul, Turkey

German High School of Istanbul, *Abitur*

- Abitur grade: 1.4
- Abitur subjects: Mathematics, Biology, German, English

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

PROFESSIONAL EXPERIENCE

04.2021 – present
Munich, Germany

Teaching Assistant, *Technical University of Munich*

- Python Workshop (WS 20/21 - WS 23/24)
- Neuroprosthetics (WS 22/23 - WS 23/24)
- Biosignal Processing and Modeling (SS 23)
- Human-Centered Neuroengineering: Cybathlon (SS 22)
- Signal Processing: Dynamic System Modeling (SS 22)
- Machine Intelligence and Society (in Python) (SS 22)
- Physics for Electrical Engineers (SS 21)
- C++ workshop (WS 20/21)

10.2021 – 06.2023
Munich, Germany

Research Assistant, *Institute for Cognitive Systems, Technical University of Munich*

- Served as the **primary contact for EEG systems**, overseeing and maintaining the devices
- Designed and tested **home appliance systems for a spinal cord injury patient**
- Conducted **motor imagery recordings and analysis** using EEG
- Implemented **online eye blink detection** and **external device control** using EEG

INTERNSHIPS

08.2023 – present
Berlin, Germany

Internship, *Prof. Surjo R. Soekadar - Clinical Neurotechnology Lab*
- Classification of rock-paper-scissors gestures recorded using **optically pumped magnetometers (OPM)**
- Review of brain-computer interfaces for neurorehabilitation of stroke patients

03.2022 – 04.2022
Munich, Germany

Internship, *Prof. Simon Jacob - Translational NeuroTechnology Laboratory, Technical University of Munich / Prof. Moritz Grosse-Wentrup - Research Group Neuroinformatics, University of Vienna*
- Set up the hard- and software for the **Brain-AI-Interfaces project** involving an **aphasia patient** that will be implanted with a **microelectrode array**
- Worked on an **automatic spike sorting** pipeline

05.2021 – 07.2021
Munich, Germany

Internship, *Prof. Gordon Cheng, Nicolas Berberich - Institute for Cognitive Systems, Technical University of Munich*
- Developed a systematic way to **assess the signal quality of EEG** recordings
- Made **rest state and mental load recordings** with different EEG systems

10.2020
Istanbul, Turkey

Internship, *Prof. Ata Akin - Acıbadem University*
- Researched **fundamental topics in brain research**
- Statistical analysis of **Stroop test** results

10.2019
Vienna, Austria

Internship,
Prof. Moritz Grosse-Wentrup - Research Group Neuroinformatics, University of Vienna
- Set up **research-grade wet EEG systems**

07.2016
Istanbul, Turkey

Internship, *Prof. Reyhan Küçükkaya - Istanbul Florence Nightingale Hospital*
- Observed the following surgeries/operations/medical examinations:

Open heart, Scoliosis, Prostate, Lengthening, Hematology, Ophthalmology

PUBLICATIONS

09.2023

Grip Force Dynamics during Exoskeleton-Assisted and Virtual Grasping, *ICORR*
https://doi.org/10.1109/ICORR58425.2023.10304698

04.2023

Investigating the relationship between cue immersion and the strength of motor imagery during hand and wrist movements, *IEEE/EMBS*
https://doi.org/10.1109/NER52421.2023.10123823

LANGUAGES

Turkish
Native

English
C1, TOEFL iBT Score: 113

German
C1, German Abitur

Norwegian
A2, TUM Language Course

SKILLS

Programming Languages
- *Python*
- *MATLAB*
- *C++*
- *C*

Software
- *Machine Learning*
- *Data Analysis*
- *3D Modeling (Blender & Fusion 360)*
- *GUI Development (Qt Creator)*

EEG
- *Setting up and recording*
- *Setting up computer-driven experiments*
- *Data analysis (MNE & EEGLAB)*

Microcontrollers
- *ESP32*
- *Raspberry Pi*
- *Arduino*

INTERESTS

TEDxTUM Curation Team Member | **President of the International Committee of Olydorf**

Head of "Science Orientation Week" Team | **Head graphic and logo designer in school magazine "Çizgi"**

Electric Guitar *(London College of Music Examinations Grade 4)* | **SSI Open Water Diver** | **Advanced Skier**

Aikido *(Brown belt, Yeşilyurt Sports Club)* | **Brazilian Jiu-Jitsu** *(White belt with two stripes, Pound for Pound Munich)*