# Karahan Yılmazer

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www.github.com/karahanyilmazer



#### **EDUCATION**

**Technical University of Munich**, Elite Master of Science in Neuroengineering 10.2022 - present Munich, Germany • Tentative overall grade: 1.2 Student representative Ludwig Maximilian University of Munich, 10.2022 - present Elite Master of Science in Neuro-Cognitive Psychology Munich, Germany • Tentative overall grade: 1.4 **Technical University of Munich**, Master of Science in Electrical and Computer Engineering 04.2022 - present Munich, Germany • Tentative overall grade: 1.6 **Technical University of Munich,** Bachelor of Science in Electrical and Computer Engineering 10.2018 - 02.2022 Munich, Germany • Thesis topic: Eye Blink Detection and Motor Imagery Using A Wireless EEG: An Investigation, Grade: 1.3 • Overall grade: 2.2 BCI & Neurotechnology Spring School, g.tec medical engineering GmbH 04.2021 • Attended lectures about various topics from brain research Virtual • 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 Norwegian University of Science and Technology, Exchange Semester Virtual

- 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

## PROFESSIONAL EXPERIENCE

10.2021 - present Munich, Germany Research Assistant, Institute for Cognitive Systems, Technical University of Munich

- In charge of the EEG systems
- Actively working on:
  - Designing and testing home appliance systems for a spinal cord injury patient
  - Motor imagery recordings and analysis using EEG
  - Online eye blink detection and external device control using EEG

04.2021 - present Munich, Germany Teaching Assistant, Technical University of Munich

- Python Workshop (WS 20/21 SS 23)
- Neuroprosthetics (WS 22/23, SS 23)
- 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)

# **PROJECTS**

PROJECTS			
08.2023 – present Berlin, Germany	<ul> <li>Internship, Prof. Surjo R. Soek</li> <li>Classification of rock-papmagnetometers (OPM)</li> <li>Review of brain-computer</li> </ul>	per-scissors gestures recor	ded using <b>optically pumped</b>
03.2022 – 04.2022 Munich, Germany	<ul> <li>Internship, Prof. Simon Jacob - Translational NeuroTechnology Laboratory, Technical University of Munich / Prof. Moritz Grosse-Wentrup - Research Group Neuroinformatics, University of Vienn</li> <li>Set up the hard- and software for the Brain-AI-Interfaces project involving an aphasia patient that will be implanted with a microelectrode array</li> <li>Worked on an automatic spike sorting pipeline</li> </ul>		
05.2021 – 07.2021 Munich, Germany	<ul> <li>Internship, Prof. Gordon Cheng, Nicolas Berberich - Institute for Cognitive Systems, Technical University of Munich</li> <li>Developed a systematic way to assess the signal quality of EEG recordings</li> <li>Made rest state and mental load recordings with different EEG systems</li> </ul>		
IO.2020 Istanbul, Turkey	<ul> <li>Internship, Prof. Ata Akin - Ata</li> <li>Researched fundamenta</li> <li>Statistical analysis of Str</li> </ul>	l topics in brain research	ı
IO.2019 Vienna, Austria	Voluntary Internship, Prof. Moritz Grosse-Wentrup - Research Group Neuroinformatics, University of Vienna • Set up research-grade wet EEG systems		
07.2016 Istanbul, Turkey	<ul> <li>Internship, Prof. Reyhan Küçükkaya - Istanbul Florence Nightingale Hospital</li> <li>Observed the following surgeries/operations/medical examinations:</li> <li>Open heart, Scoliosis, Prostate, Lengthening, Hematology, Ophthalmology</li> </ul>		
PUBLICATIONS			
2023	Investigating the relationship between cue immersion and the strength of motor imagery during hand and wrist movements, <i>IEEE</i>		
2023	${\bf Grip\ Force\ Dynamics\ during\ Exoskeleton-Assisted\ and\ Virtual\ Grasping,\it ICORR}$		
LANGUAGES			
<b>Turkish</b> Native	English C1, TOEFL iBT Score: 113	<b>German</b> CI, German Abitur	<b>Norwegian</b> A2, TUM Language Course
SKILLS			

Programming	Software	EEG	Microcontroller set
Languages	<ul> <li>Machine Learning</li> </ul>	<ul> <li>Set up and record with</li> </ul>	ups
Python	<ul> <li>Data Analysis</li> </ul>	dry and wet electrodes	• ESP32
• MATLAB	• Blender	<ul> <li>Setting up computer-</li> </ul>	<ul> <li>Raspberry Pi</li> </ul>
• C++	<ul><li>Fusion 360</li></ul>	driven experiments	• Arduino
• C	• Qt Creator	<ul> <li>Data analysis (MNE &amp;</li> </ul>	
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#### **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)