

# Abdullah Saydemir

M.SC. COMPUTER SCIENCE, TECHNICAL UNIVERSITY OF MUNICH

✉ [abdullah.saydemir@tum.de](mailto:abdullah.saydemir@tum.de) | 🏠 [saydemr.github.io](https://saydemr.github.io) | 📺 Saydemr

Some parts are intentionally omitted in this public version. Please use the document provided to you if you are a recruiter.

## Education

### Technical University of Munich (TUM)

M.Sc. IN COMPUTER SCIENCE

Munich, DE

Oct 2022 - Aug 2024

### Özyeğin University

B.Sc. IN COMPUTER SCIENCE

- GPA: 4.00/4.00
- Bachelor's Thesis: Essential Protein Prediction Using Graph Neural Networks

Istanbul, TR

Sep 2017 - Aug 2022

### Oregon State University

NON-DEGREE EXCHANGE STUDENT

- GPA: 4.00/4.00

Oregon, US

Mar 2021 - Jul 2021

## Publications (Peer Reviewed)

- A. Saydemir\***, M. Lienen\*, S. Günnemann. "Unfolding Time: Generative Modeling for Turbulent Flows in 4D", AI4Science Workshop, ICML, 2024.
- M. Elyasi, M. E. Simitcioglu, **A. Saydemir**, A. Ekici, O. Örsan Özener, and H. Sozer. "Genetic Algorithms and Heuristics Hybridized for Software Architecture Recovery", Automated Software Engineering Journal, 2023.
- M. Elyasi, M. E. Simitcioglu, **A. Saydemir**, A. Ekici, and H. Sözer. "HYGAR: A Hybrid Genetic Algorithm for Software Architecture Recovery", In Proceedings of the 37th ACM/SIGAPP Symposium on Applied Computing, 2022.
- A. Saydemir**, M. E. Simitcioglu and H. Sözer, "On the Use of Evolutionary Coupling for Software Architecture Recovery", 15th Turkish National Software Engineering Symposium (UYMS), 2021.

## Research Experience

### Data Analytics and Machine Learning Group, TUM

RESEARCH ASSISTANT - Python, PyTorch

- Working on generative diffusion models for simulating turbulent flows with Navier-Stokes equations in 4D.
- Integrating non-conventional laplacians to GNNs to enhance their expressiveness.

Munich, DE

Apr 2023 - Present

### Chair of Aerodynamics and Fluid Mechanics, TUM

RESEARCH ASSISTANT - Python, PyTorch, Nvidia Modulus

- Modeling collision operators in Lattice-Boltzmann equations with physics inspired geometric deep learning models.

Munich, DE

Sep 2023 - Present

### Software Engineering Lab, Özyeğin University

RESEARCH ASSISTANT - Python, Bash

- Developed algorithms and tools for recovering modular software architectures by mining code repositories.
- Built automated systems for investigating the effects of evolutionary coupling in software architecture recovery.

Istanbul, TR

Mar 2021 - Jun 2023

## Honors & Awards

2022	<b>High Honors</b> , Özyeğin University	Istanbul, TR
2021	<b>Honor Roll</b> , Oregon State University	Oregon, US
2021	<b>Best Paper Award</b> , 15 <sup>th</sup> National Software Engineering Symposium of Türkiye	Izmir, TR
2021	<b>Certificate of Appreciation</b> , Özyeğin University	Istanbul, TR
2021	<b>Champion as a Team</b> , Turkish Intercollege Chess League	Online
2018-2022	<b>ISOV Scholarship</b> , Istanbul Chamber of Industry	Istanbul, TR
2017-2022	<b>Full Merit Scholarship</b> , Özyeğin University	Istanbul, TR
2015	<b>Wonder-working Student</b> , Microsoft Türkiye	Ankara, TR

## Work Experience

---

### Datart

Remote

SOFTWARE ENGINEER - *Kotlin, Docker*

Feb 2022 - Mar 2023

- Developed the fuel estimation algorithm for haul trucks for Komatsu & Modular Mining.
- Coded an optimizer that produces possible future missions and refuel windows of a truck.

### QuantWiFi

Istanbul, TR

EMBEDDED SOFTWARE ENGINEER - *C, C++*

Mar 2021 - Jan 2022

- Contributed to WiFi analyzer that scans the network and extracts relevant information.
- Implemented a testbed with prplMesh, MiniNet and other hardware simulators.

## Skills

---

**Programming** Python, Java/Kotlin, C++, Rust

**Languages** Turkish (Native), English (C1-C2), German (A1)

**Tools & Topics** PyTorch, MPI, OpenMP, CUDA, Docker, Nvidia Modulus

## Teaching Experience

---

2020-2021 **Teaching Assistant**, Discrete Mathematics, Özyeğin University

Istanbul, TR

2020 **Teaching Assistant**, Differential Equations, Özyeğin University

Istanbul, TR

2019-2020 **Teaching Assistant**, Calculus II, Özyeğin University

Istanbul, TR

2019-2020 **Teaching Assistant**, Calculus I, Özyeğin University

Istanbul, TR

## Volunteer Work

---

### Speech and Language Processing Book

CONTRIBUTOR

- Corrected calculations and typographical errors in [3rd edition of Stanford NLP book](#) by Prof. Jurafsky and Prof. Martin.
- Maintains [a public repository](#) on possible errors in the book for communication in the community.

### HackMIT '23

Boston, US

MENTOR

- Answered variety of coding questions from hackathon participants.

### German - Turkish Friendship Association

Munich, DE

VOLUNTEER IN POST DISASTER AID TEAM

- Collected, classified, packaged goods to be sent to Pazarçık, a town in the epicenter of the two major earthquakes.
- Received heart-felt thanks and live video from on-site international medical aid team.

## Leadership & Club Activities

---

### IEEE Computer Science Society, IEEE Student Branch

Istanbul, TR

CHAIRMAN

Sep 2020 - Feb 2021

- Hosted a four-hour crash course on git, GitHub, and personal website setup for non-engineering students.
- Organised Global Game Jam '21, a three full-day event for everyone interested in game design and development.

### IEEE Student Branch

Istanbul, TR

BOARD MEMBER

Sep 2020 - Feb 2021

- Organised tea talks with professors working in the industry and reached more than a thousand participants.
- Live streamed events organized by the societies under the student branch and published the edited recordings on YouTube.