

Tobias Hölzer

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ABOUT ME

I am Tobias Hölzer, a 23 year-old climate researcher and data scientist passionate about fighting climate change. I have already worked in many areas of IT and am particularly talented in the development and implementation of full-stack applications. I can follow a machine learning model through its entire life - from idea to research to production. Visit my website for samples of my work.

EDUCATION

Duale Hochschule Baden-Württemberg Stuttgart

Stuttgart, Germany

Bachelor's of Science, Business Informatics / Data Science

Oct 2019 — Sep 2022

- Relevant Coursework: Data Structures, Program Development, Advanced Machine Learning, Data Analysis and Optimization, Big Data Programming, Data Management, Data Science Fundamentals

Freie Universität Berlin

Berlin, Germany

Interim studies, Physics

Nov 2022 — Sep 2023

- Relevant Coursework: Introduction to physics, Linear Algebra

Universität Potsdam

Potsdam, Germany

Master of Science, Remote Sensing and Geoinformation

Oct 2023 — Ongoing

- Relevant Coursework: Non-Linear Data Analysis, Big Data, Remote Sensing, Spatial Statistics and Models, Atmospheric Science, Remote Sensing of Permafrost

WORK EXPERIENCE

Remote Sensing of Permafrost

Apr 2024 — Present

Alfred-Wegener-Institut

Potsdam, Germany

- Scaled a high resolution machine learning image segmentation pipeline to detect retrogressive-thaw-slumps in the panarctic.
- Diverse Open-Source contributions

Lecturer

Nov 2022 — Present

Duale Hochschule Baden Württemberg

Stuttgart, Germany

- At very young age of 21 I became a lecturer for “Advanced Machine Learning methods for data scientists” at my old university.
- Now I give a yearly lecture about “Climate and Big Data Analysis”.

Consulting

Sep 2022 — Aug 2024

IBM

Munich & Berlin, Germany

- Worked on diverse projects spanning multiple industries:
 - Data Engineering for XENTRY, the after sales tool from Mercedes-Benz
 - Remote Sensing Engineer for the Austrian military
 - Front-End development for an internal patent-tool of Mercedes-Benz

Cooperate Student

Sep 2019 — Aug 2022

IBM

Stuttgart, Germany

- Worked in form of germany corporate studies in multiple departments within IBM.
 - Research (Zurich): Analyzed flood-detection patterns using computer vision on remote sensing data, resulting in a State-of-the-Art model which later became the benchmark for the first geospatial AI foundation models.
 - Weather Company: Conducted research on forest health and deforestation in Europe, utilizing IBM Cloud and Sentinel-2 remote sensing data.
 - Research (UK): Developed a Python-based ML framework using PyTorch and proposed a BERT-inspired model to aid climate change research.
 - Technology: Created interactive visualizations for a swarm intelligence algorithm predicting water leaks in buildings.

PROJECTS

Date **Engineer**, DHBW-Engineering

Oct 2021 — Sep 2022

- As part of DHBW Engineering, I contributed to building a real electric race car for Formula Student competitions.
- Developed the Car Evaluation Kit, a full-stack Web-App for logging testing data.
- Improved the team's measurement data flow
- Worked on the localization algorithm for the driverless-mode of the car.

SKILLS

- **Qualifactions:** Full-Stack Web-Development, Cloud, Project & Software-Architecture planning, Machine Learning & AI, Scientific Work
- **Programming Languages:** Python, Rust, JavaScript, TypeScript, HTML/CSS
- **Technologies:** Xarray, Pandas, Numpy, Zarr, Dask, React, Svelte, Git, UNIX, Docker, NGINX