ARNO RÜEGG

MSc Geomatics

CONTACT

01.03.1999

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SKILLS

- Python (advanced)
- PyTorch, NumPy, Pandas
- Bash (advanced)
- Git (advanced)
- C++, Matlab, Java, SQL (basic)
- Machine Learning
- Large Scale AI Engineering
- Computer Vision
- Parameter Estimation
- Photogrammetry
- Signal Processing
- Earth Observation
- QGIS, ArcGIS

LANGUAGES

- German (mother tongue)
- English (Fluent)
- French (Basic)

HOBBYS

- Football
- Scouts
- Hiking
- Skiing

PROFILE

I am a PhD researcher in geomatics, specializing in machine learning for geospatial data modeling. My work focuses on deep learning for ionospheric mapping and data fusion, utilizing HPC clusters for large-scale computation. I have extensive experience with PyTorch, parameter estimation, and model optimization. Beyond geospatial applications, I have worked on computer vision for remote sensing, feature extraction, and multi-sensor data fusion during my Master's. At ETH Zurich, I developed a strong foundation in high-performance data processing and analysis, gaining hands-on experience in applying and refining modern machine learning algorithms. Through various research projects, I have refined my Python expertise, distributed computing skills, and advanced ML techniques.

EDUCATION

PhD Space Geodesy — 2023 - now
ETH Zürich

- A Comparative Study of VTEC Estimates Derived From S/X VLBI and VGOS Observations (AGU Space Weather 2025)
- Fusion of GNSS and VLBI Data for Global Ionospheric Mapping (IAG - Geodesy for a Changing Environment 2025 (under review))
- Ionospheric Slant TEC Modeling Based on GNSS Data with Machine Learning (work in progress)

MSc Geomatics (Geoinformatics) — 2021 - 2023
ETH Zürich

- Master Thesis: A Shared Deep Feature Embedding of Sentinel-1 and Sentinel-2 for Building Detection
- Project: Vegetation mapping with ICESat-2

BSc Geospatial Engineering — 2018 - 2021
ETH Zürich

- Bachelor Thesis: Differentiation of Solid and Loose Rock on Orthophotos with Deep Learning

OTHER ACTIVITIES

Department leader Pfadi Trogen — 2021 - 2025

Assistant

Geodetic Data analysis	Spring 2023 + 2024
Field course Geodetic measurement techniques	Spring 2022
Linear algebra	Spring 2021