Hadi Shokati

Germany | hadi.shokati@uni-tuebingen.de | +49 15901384204 | Website | GitHub | LinkedIn | Google Scholar

Summary

I am an **Environmental Scientist** at the University of Tübingen, Germany, combining **deep learning** and **remote sensing** to model soil and environmental processes in agricultural systems. I develop advanced deep-learning solutions, including **hybrid models, fine-tuning foundation models, forecasting and time-series analysis**, and have experience in **data analysis, UAV photogrammetry, computer vision, and spatial data processing**. Proficient in **Python, PyTorch, Google Earth Engine,** and **GIS workflows**.

Experience

Soil Scientist, Department of Geosciences, University of Tübingen, Germany 2023–Present

- Implement transfer-learning pipeline for geospatial segmentation, reducing labeled-data requirements by 80% and increasing precision by up to 55%.
- Develop hybrid models for soil erosion prediction, addressing validation data scarcity challenge in soil erosion studies.
- Forecast future soil erosion susceptibility across space and time.
- Reconstruct historical rainfall-erosivity maps, overcoming the lack of high-resolution precipitation records.
- Automate large-scale data pipelines, reducing preparation time by 40%.
- Collaborate with computer-science researchers to develop advanced deep-learning models.
- Advise MSc students on research design, data analysis, and model development.

Data Scientist, Department of Geosciences, University of Tübingen, Germany 2023

- Implemented an ML pipeline with UAV hyperspectral data for soil moisture prediction, yielding 33% and 40% R^2 improvements over Landsat and Sentinel-2, respectively.
- Performed geospatial analysis using GIS, remote, and proximal sensing techniques.

Geospatial Data Analyst, Soil Conservation and Watershed Management Research Institute, Iran 2022

- Collected and analyzed UAV data for precision agriculture and watershed management.
- Integrated remote sensing and UAV data to identify freshwater springs.

Teaching Assistant, University of Tehran, Iran 2020–2022

- Courses: Fluid Mechanics, designing surface irrigation systems, Designing drainage and irrigation networks, Surface irrigation hydraulics.

Technical Skills

Programming: Python (Professional), MATLAB (Intermediate), R (Beginner), JavaScript (Beginner)
GIS and Remote Sensing: ArcGIS Pro, QGIS, ENVI, SNAP, SAGA and Google Earth Engine (Professional)
Machine Learning: Regression, Classification, Data Analysis, Image Processing, Image Segmentation, Transfer Learning, Fine-Tuning, TensorFlow/Keras, PyTorch
Languages: English (B2), German (A2), Turkish (B1), Persian and Azerbaijani (C2)
Other: UAV Piloting (Flight Operations, Photogrammetry, Spatial Data Analysis)

Education

PhD, Soil Science and Geomorphology, University of Tübingen, Germany 2023–Present

MSc, Water Engineering and Sciences, Tarbiat Modares University, Iran 2019

BSc, Water Engineering and Sciences, University of Mohaghegh Ardabili, Iran 2017

Certifications & Training

Deep Learning certificate, ELLIS Summer School: AI for Earth and Climate Sciences, Germany 2025

Deep Learning certificate, DeepLearn 2025: 12th International School on Deep Learning, Portugal 2025

13th EARSeL Workshop on Imaging Spectroscopy, Spain 2024

German Japanese exchange workshop, Germany 2023