Ruhollah **Taghizadeh**

POSTDOC RESEARCHER

Department of Geosciences, Tübingen University

✉ ruhollah.taghizadeh-mehrjardi@mnf.uni-tuebingen.de | ⌂ ruhollahtaghizadeh.netlify.app | ⬚ wj5v9 | ⬚
RuhollahTaghizadeh | 🐦 RuhollahTaghiz

About me

My primary research interest is in Pedometrics with a particular focus on remote/proximal soil sensing and Digital Soil Mapping. The core of the pedometric approach integrates soil system knowledge with applied statistics, Machine Learning, geoinformatics, and Remote Sensing. I apply the most recent technology in spatial data analysis to model and predict various environmental metrics such as soils, water, vegetation, and climate.

Experience

Department of Geosciences, University of Tübingen, Germany   2017-Present
Postdoc Researcher

Department of Plant Science, South Dakota State University, USA   2016
Postdoctoral Research Assistant

Faculty of Agriculture, Ardakan University, Iran   2013-2017
Assistant Professor

Department of Soil and Water, Agricultural Research Center, Iran   2010-2011
Geospatial Consultant

Education

Faculty of Agricultural Engineering and Technology, University of Tehran, Iran   2012
PhD in Soil Science

Sydney Institute of Agriculture, The University of Sydney, Australia   2012
Postgraduate Visiting Scholar in Digital Soil Mapping

Faculty of Agricultural Engineering and Technology, University of Tehran, Iran   2008
MSc in Soil Science

Faculty of Agriculture, SB University of Kerman, Iran   2005
BS in Soil Science

Projects

German Research Foundation   2022
Sensitivity and Response of Himalayan Timberline Ecotones to Global Warming

German Research Foundation   2020
Transferability of Machine Learning for Soil Mapping

Iranian Agricultural Research, Education & Extension Organization   2019
Digital Soil Mapping in Kurdistan

Alexander von Humboldt Foundation   2017
Digital Soil Mapping with Limited Data

Research interests

Pedology; Digital Soil Mapping; Remote and Proximal Sensing; Spatial Data Analysis; Machine Learning; Statistical Inference; Soil Health; Climate Change; Precision Agriculture

Teaching

Teaching Assistant at University of Tübingen, Germany   2020-Present

- Spatial Pedology and Geomorphology   GS
- Statistics   UGS

Assistant Professor at Ardakan University, Iran   2013-2020

- Soil Genesis and Classification   UGS
- Soil Erosion and Conservation   UGS
- Fundamentals of Soil Science   UGS

Guest Lecture at Yazd University, Iran   2013-2017

- Soil Mapping   GS
- Land Evaluation   GS

Fellowships, honors, awards

Five Nominated Pedometrics Best Paper	2020
Postdoctoral Fellowship of Alexander von Humboldt Foundation	2017
Top Lecturer Award at Ardakan University	2017
Top Researcher Award at Ardakan University	2016

Professional services

Award Committee for the Pedometrics Commission	2022-Present
Executive board members of ISMC	2022-Present
Associate Editor of Frontiers in Soil Science/Pedometrics	2022-Present
Reviewed >200 papers from >20 journals	2013-Present

Selected Publications

1. Taghizadeh-Mehrjardi, R., Nabiollahi, K., Minasny, B., & Triantafilis, J. (2015). Comparing data mining classifiers to predict spatial distribution of USDA-family soil groups in Baneh region, Iran. *Geoderma*, *253-254*, 67–77. `https://doi.org/10.1016/j.geoderma.2015.04.008`

2. Taghizadeh-Mehrjardi, R., Sheikhpour, R., Zeraatpisheh, M., Amirian-Chakan, A., Toomanian, N., Kerry, R., & Scholten, T. (2022). Semi-supervised learning for the spatial extrapolation of soil information. *Geoderma*, *426*, 116094. `https://doi.org/10.1016/j.geoderma.2022.116094`

3. Taghizadeh-Mehrjardi, R., Hamzehpour, N., Hassanzadeh, M., Heung, B., Ghebleh Goydaragh, M., Schmidt, K., & Scholten, T. (2021). Enhancing the accuracy of machine learning models using the super learner technique in digital soil mapping. *Geoderma*, *399*, 115108. `https://doi.org/10.1016/j.geoderma.2021.115108`

4. Taghizadeh-Mehrjardi, R., Schmidt, K., Toomanian, N., Heung, B., Behrens, T., Mosavi, A., S. Band, S., Amirian-Chakan, A., Fathabadi, A., & Scholten, T. (2021). Improving the spatial prediction of soil salinity in arid regions using wavelet transformation and support vector regression models. *Geoderma*, *383*, 114793. `https://doi.org/10.1016/j.geoderma.2020.114793`

5. Taghizadeh-Mehrjardi, R., Mahdianpari, M., Mohammadimanesh, F., Behrens, T., Toomanian, N., Scholten, T., & Schmidt, K. (2020). Multi-task convolutional neural networks outperformed random forest for mapping soil particle size fractions in central Iran. *Geoderma*, *376*, 114552. `https://doi.org/10.1016/j.geoderma.2020.114552`