

## CURRICULUM-VITAE



### Ruhollah Taghizadeh-Mehrjardi

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#### PROFESSIONAL EXPERIENCE

07.2017 - Date	<b>Postdoctoral Researcher</b> Department of Geosciences, Tübingen University, Germany
02.2013 – 06.2017	<b>Assistant Professor</b> Faculty of Agriculture & Natural Resources, Ardakan University, Iran
05.2016 – 08.2016	<b>Postdoctoral Research Assistant</b> Department of Plant Science, South Dakota State University, USA
01.2012 – 06.2012	<b>Postgraduate Visiting Scholar</b> Sydney Institute of Agriculture, The University of Sydney, Australia
01.2010 – 01.2011	<b>Geospatial Consultant</b> Department of Soil and Water, Agricultural Research Center, Iran

#### EDUCATION

2008 - 2012	<b>Ph.D. Soil Science</b> , University of Tehran, Iran
2005 - 2008	<b>M.Sc. Soil Science</b> , University of Tehran, Iran
2001 - 2005	<b>B.Sc. Soil Science</b> , SB University of Kerman, Iran

#### PROJECTS

2022	<b>Collaborator:</b> Sensitivity and Response of Himalayan Timberline Ecotones to Global Warming, Funded by German Research Foundation
2020	<b>Collaborator:</b> Transferability of Machine Learning for Soil Mapping, Funded by German Research Foundation
2019	<b>Co-Principal Investigator:</b> Digital Soil Mapping in Kurdistan, Funded by Iranian Agricultural Research, Education & Extension Organization
2017	<b>Principal Investigator:</b> Digital Soil Mapping with Limited Data, Funded by Alexander von Humboldt Foundation
2017	<b>Collaborator:</b> Study of limiting factors of plant establishment in the barren lands of Nayband Gulf, Funded by Pars Economic Energy Zone
2016	<b>Principal Investigator:</b> Optimization of Spatial Sampling Design, Funded by Ardakan University
2016	<b>Principal Investigator:</b> Digital Soil Mapping in Ardakan-Yazd Regions, Funded by Ardakan University
2012	<b>Collaborator:</b> Digital Mapping of Soil Salinity in Arid Regions, Funded by Iranian Agricultural Research, Education & Extension Organization

## **RECOGNITION/AWARDS**

2017	<b>Postdoctoral Fellowship:</b> Alexander von Humboldt Foundation
2017	<b>Top Lecturer Award:</b> Ardakan University
2016	<b>Top Researcher Award:</b> Ardakan University
2012	<b>Top Ph.D. Student:</b> GPA of 18/20, University of Tehran
2011	<b>Visiting Fellowship:</b> IR Ministry of Science, Research & Technology
2010	<b>Member:</b> Iran's National Elites Foundation
2009	<b>Postgraduate Fellowship:</b> IR Ministry of Science, Research & Technology
2009	<b>Top Student Researcher Award:</b> University of Tehran

## **TEACHING EXPERIENCE**

2020 - Date	<b>Teaching Assistant at University of Tübingen</b> <ul style="list-style-type: none"><li>— Spatial Pedology and Geomorphology (GEO-76)</li><li>— Statistics (GEO-25)</li></ul>
2013 - 2020	<b>Assistant Professor at Ardakan University</b> <ul style="list-style-type: none"><li>— Soil Genesis and Classification</li><li>— Soil Erosion and Conservation</li><li>— Fundamentals of Soil Science</li><li>— Saline Soil Management</li></ul>
2013 - 2017	<b>Guest Lecture at Yazd University</b> <ul style="list-style-type: none"><li>— Soil Mapping</li><li>— Land Evaluation</li></ul>
2009 - 2011	<b>Teaching Assistant at University of Tehran</b> <ul style="list-style-type: none"><li>— Fundamentals of Soil Science (Lab)</li></ul>

## **WORKSHOP LECTURER**

2022	An introduction to Spatial Analysis in QGIS, University of Tübingen
2022	An introduction to GIS, University of Tübingen
2020	Spatial Data in R, Iranian Soil & Water Research Institute
2016	Digital Soil Mapping in R, Iranian Soil & Water Research Institute
2015	Data Mining in Soil Sciences, Iranian Soil & Water Research Institute
2014	Modelling in Soil Sciences, Iranian Soil Science Congress

## **ADVISING/SUPERVISION**

2013 - Date	Co-supervising 4 and advising 15 Ph.D. students
2013 - Date	Supervising 5 and advising 16 M.Sc. students
2013 - Date	Supervising 5 B.Sc. students

## **PROFESSIONAL SERVICE**

2022 - Date	<b>Member:</b> Award Committee for the Pedometrics Commission
2022 - Date	<b>Member:</b> Executive board members of ISMC
2022	<b>The Organizer of Cabon4Green Workshop:</b> A European Civic University
2022 - Date	<b>Editorial Board:</b> Soil Studies; Levantine Journal of Applied Sciences
2022 - Date	<b>Associate Editor:</b> Frontiers in Soil Science/Pedometrics
2021 - Date	<b>The Organizer of Scientific Workshops:</b> SFB 1070, University of Tübingen
2021 - Date	<b>Guest Editor:</b> Frontiers in Environmental Sci/ Frontiers in Soil Sci
2020 - Date	<b>Guest Editor:</b> Agronomy
2017 - Date	<b>Member:</b> European Geosciences Union
2017 - Date	<b>Member:</b> German Soil Science Society
2017	<b>Head of Department:</b> Ardakan University
2017	<b>Executive Chairman:</b> 1 <sup>th</sup> Conference of Agriculture, Ardakan University
2013 - 2017	<b>The Organizer of Workshops:</b> Ardakan University
2013 - 2017	<b>Review Panel</b> for National Salinity Research Center
2013 - Date	<b>Reviewed</b> >200 papers from >20 journals

## **PROFESSIONAL TRAINING**

2022	Open Source Solutions for Earth System Data, OpenGeoHub
2022	Modeling Water Fluxes in the Soil-Plant System, UCLouvain
2022	Oxford Machine Learning Summer School, AI for Global Goals
2022	Science Communication, University of Tübingen
2022	Agile Project Management for Research, University of Tübingen
2021	Spatial Sampling, Wageningen University
2021	Research Funding from Industry, University of Tübingen
2021	Leading Virtual Teams, University of Tübingen
2021	Grant Proposal Writing, University of Tübingen
2020	Uncertainty Propagation in Spatial Modelling, Wageningen University
2019	Geostatistics, Wageningen University
2018	GEOSTAT Summer School, IBOT
2018	Digital Soil Mapping, ISRIC
2018	Ph.D. Supervision Process, University of Tübingen
2012	Digital Soil Mapping with R, The University of Sydney

## **TECHNICAL SKILLS**

Programming	R (professional) and Python (basic)
Machine Learning	RapidMiner, and Weka
GIS and RS	ArcGIS, QGIS, SAGA, ENVI, and Google Earth Engine
Soil Analysis	Soil Chemical, Physical, Mineralogical, and Micro-morphological analysis
Soil Survey	Description, Classification, and Interpretation of Soils in the Field

## **FIELDWORK**

Iran	Soil Sampling, Soil Survey, Geophysical Surveys, Soil Erosion Surveys
Kenya	Soil Sampling, Soil Survey, Land Evaluation
USA	Soil Sampling

## **LANGUAGES**

English	<b>Good:</b> Reading, Listening, Writing, and Speaking
German	<b>Basic:</b> Reading, Listening, Writing, and Speaking
Arabic	<b>Basic:</b> Reading, Listening, Writing, and Speaking
Persian	<b>Native</b>

## **RESEARCH FOCI**

Pedology, Digital Soil Mapping, Pedometrics, Digital Soil Morphometrics  
Soil carbon, Climate Change, Precision Agriculture, Soil health  
Data Analytics, Machine Learning, Digital Agriculture  
Soil-landscape modeling, GIS and Remote Sensing, Soil spectroscopy  
Soil Information System and Soil Database, Soil Data harmonization

## **ALL PUBLICATION LIST**

### **-ISI Journals**

- 1) **Taghizadeh-Mehrjardi, R.**, Sheikhipour, R., Zeraatpisheh, M., Amirian, A., 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>
- 2) Mirzaeitalarposhti, R., Shafeezadeh, H., **Taghizadeh-Mehrjardi, R.**, Demyan, MS. 2022. Digital soil texture mapping and spatial transferability of machine learning models using Sentinel-1, Sentinel-2 and terrain derived covariates. *Remote Sensing*, 14, 5909. <https://doi.org/10.3390/rs14235909>
- 3) Shahabi, A., Nabiollahi, K., Davari, M., Zeraatpisheh, M., Heung, B., Scholten, T., **Taghizadeh-Mehrjardi, R.** 2022. Spatial prediction of soil properties through hybridized random forest model and combination of reflectance spectroscopy and environmental covariates. *Geocarto International*, 10.1080/10106049.2022.2138565
- 4) Mallah, S., Delsouz, B., Davatgaar, J., Scholten, T., Emadi, M., Amirian, A., Kerry, R., Moosaci, A., **Taghizadeh-Mehrjarsi, R.** 2022. Predicting soil textural classes using random forest models: learning from imbalanced data. *Agronomy*, 12, 2613. <https://doi.org/10.3390/agronomy12112613>
- 5) Sohrabizadeh, Z, Sodaiezadeh, H, Hakimzadeh, M, **Taghizadeh-Mehrjarsi, R.**, Ghanei, MJ. 2022. A statistical approach to study the Spatial Heavy Metal Distribution in Soils in the Kushk Mine, Iran. *Geoscience Data Journal*, <https://doi.org/10.1002/gdj3.175>
- 6) Cheshmberah, F., Zolfaghari, A., **Taghizadeh-Mehrjardi, R.**, Scholten, T. 2022. Evaluation of mathematical models for predicting particle size distribution using digital soil mapping in

- semiarid agricultural lands. *Geocarto International*,  
<https://doi.org/10.1080/10106049.2022.2076911>, *Accepted*
- 7) Shirzadi, A., Shahabi, H., Nabiollahi, K., **Taghizadeh-Mehrjardi, R.**, Lizaga, L., Clague, J., Singh, S., Golmohamadi, F., Ahmad, A. 2022. Towards Robust Smart Data-Driven Soil Erodibility Index Prediction under Different Scenarios. *Geocarto International*. <https://doi.org/10.1080/10106049.2022.2076918>, *Accepted*
  - 8) **Taghizadeh-Mehrjardi, R.**, Khademi, H., Khayamim, F., Zeraatpisheh, M., Heung, B., Scholten, T. 2022. A comparison of model averaging techniques to predict the spatial distribution of soil properties. *Remote Sensing*, 14, 472. <https://doi.org/10.3390/rs14030472>
  - 9) Fathizad, H., **Taghizadeh-Mehrjardi, R.**, Hakimzadeh, M.A., Zeraatpisheh, M., Heung, B., Scholten, T., 2022. Spatiotemporal Assessment of Soil Organic Carbon Change Using Machine-Learning in Arid Regions. *Agronomy*, 12, 628.  
<https://doi.org/10.3390/agronomy12030628>
  - 10) Taghipour, K., Heydari, M., BakhsKooch, Y., Fathizad, H., Heung, B., **Taghizadeh-Mehrjardi, R.** 2022. Assessing changes in soil quality between protected and degraded forests using digital soil mapping for semiarid oak forests, Iran. *Catena*, 213, 106204.  
<https://doi.org/10.1016/j.catena.2022.106204>
  - 11) Zeraatpisheh, M., Bottega, E.L., Bakhshandeh, E., Owliaie, H., **Taghizadeh-Mehrjardi, R.**, Kerry, R., Scholten, T., Xu M. 2022. Spatial variability of soil quality within management zones: homogeneity and purity of delineated zones. *Catena*, 209, 105835.  
<https://doi.org/10.1016/j.catena.2021.105835>
  - 12) Zeraatpisheh, M., Garosi, Y., Owliaie, H., Ayoubi, S., **Taghizadeh-Mehrjardi, R.**, Scholten, T., Xu M. 2022. Improving the spatial prediction of soil organic carbon using environmental covariates selection: A comparison of a group of environmental covariates. *Catena*, 208, 105723. <https://doi.org/10.1016/j.catena.2021.105723>
  - 13) Emami, S., Alikhani, A., Pourbabi, A., Eatesami, H., Sarmadian, F., Motesharezadeh, B., **Taghizadeh-Mehrjardi, R.** 2022. Performance evaluation of phosphate-solubilizing fluorescent pseudomonads in minimizing phosphorus fertilizer use and improving wheat productivity: A two-year field study. *Journal of Soil Science and Plant Nutrition*. 22, 1224-1237. <https://doi.org/10.1007/s42729-021-00726-3>
  - 14) Mahmoudzadeh, H., Matinfar, H., Kerry, R., Eskandari, S., Ebrahimi, Z., **Taghizadeh-Mehrjardi, R.** 2022. New hybrid evolutionary models for spatial prediction of soil properties in Kurdistan. *Soil Use and Management*, 38, 191–211. <https://doi.org/10.1111/sum.12753>
  - 15) Ebrahimi, Z., **Taghizadeh-Mehrjardi, R.**, Roustaei, F., Ebrahimi, M., Mosavi, A., Heung, B., Scholten, T. 2021. Determining the contribution of environmental factors in controlling dust pollution during cold and warm months of western Iran using different data mining algorithms and game theory. *Ecological Indicators*, 132, 108287.  
<https://doi.org/10.1016/j.ecolind.2021.108287>
  - 16) Rostaminia, M., Rahmani, A., Mousavi, S., **Taghizadeh-Mehrjardi, R.**, Maghsodi, Z. 2021. Spatial prediction of soil organic carbon stocks in arid rangeland using machine learning

- algorithms. *Environmental Monitoring and Assessment*, 193, 815, <https://doi.org/10.1007/s10661-021-09543-8>
- 17) Morsy, M., **Taghizadeh-Mehrjardi, R.**, Michaelides, S., Scholten, T., Dietrich, P., Schmidt, K. 2021. Optimization of Rain Gauge Networks for Arid Regions Based on Remote Sensing Data. *Remote Sensing*, 13, 4243. <https://doi.org/10.3390/rs13214243>
- 18) **Taghizadeh-Mehrjardi, R.**, Hamzehpour, N., Hassanzadeh, M., Ghebleh, M., Heung, B., 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>
- 19) **Taghizadeh-Mehrjardi, R.**, Schmidt, K., Toomanian, N., Heung, B., Behrens, T., Mosavi, A., Shamshirband, S., Amirian, A., Fathabadi, H., 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>
- 20) **Taghizadeh-Mehrjardi, R.**, Fathizad, H., Hakimzadeh, M., Sodaiezhadeh, H., Kerry, R., Heung, B., Scholten, T., 2021. Spatio-temporal analysis of heavy metals in arid soils at the catchment scale using digital soil assessment and a random forest model. *Remote Sensing*, 13(9), 1698. <https://doi.org/10.3390/rs13091698>
- 21) **Taghizadeh-Mehrjardi, R.**, Emadi, M., Cherati, A., Heung, B., Mosavi, A. and Scholten, T., 2021. Bio-Inspired Hybridization of Artificial Neural Networks: An Application for Mapping the Spatial Distribution of Soil Texture Fractions. *Remote Sensing*, 13(5), 1025. <https://doi.org/10.3390/rs13051025>
- 22) Goydaragh, M.G., **Taghizadeh-Mehrjardi, R.**, Jafarzadeh, A.A., and Lado, M., 2021. Predicting weathering indices in soils using FTIR spectra and random forest models. *Catena*, 204, 105437. <https://doi.org/10.1016/j.catena.2021.105437>
- 23) Goydaragh, M.G., **Taghizadeh-Mehrjardi, R.**, Golchin, A., Jafarzadeh, A.A., Triantafyllis, J. and Lado, M., 2021. Using environmental variables and Fourier Transform Infrared Spectroscopy to predict soil organic carbon. *Catena*, 202, 105280. <https://doi.org/10.1016/j.catena.2021.105280>
- 24) Nabiollahi, K., Shahlaee, S., Zahedi, S., **Taghizadeh-Mehrjardi, R.**, Kerry, R. and Scholten, T., 2021. Land Use and Soil Organic Carbon Stocks—Change Detection over Time Using Digital Soil Assessment: A Case Study from Kamyaran Region, Iran (1988–2018). *Agronomy*, 11(3), 597. <https://doi.org/10.3390/agronomy11030597>
- 25) Poppiel, R.R., Demattê, J.A.M., Rosin, N.A., Campos, L.R., Tayebi, M., Bonfatti, B.R., Ayoubi, S., Tajik, S., Afshar, F.A., Jafari, A., Hamzehpour, N., **Taghizadeh-Mehrjardi, R.**, Ostovari, Y., Asgari, N., Naimi, S., Nabiollahi, K., Fathizad, H., Zeraatpisheh, M., Javaheri, F., Doustaky, M., Naderi, M., Dehghani, S., Atash, S., Farshadirad, A., Mirzaee, S., Shahriari, A., Ghorbani, M., Rahmati, M. 2021. High resolution middle eastern soil attributes mapping via open data and cloud computing. *Geoderma*, 385, 114890. <https://doi:10.1016/j.geoderma.2020.114890>
- 26) Richer-de-Forges, A.C., Lowe, D.J., Minasny, B., Adamo, P., Amato, M., Ceddia, M. B., dos Anjos, L.H., Chang, S. X., Chen, S., Chen, Z.S., Feller, C., García-Rodeja, E., Goulet, R.C., Hseu,

- Z.Y., Karklins, A., Kim, H.S., Leenaars, J. G., Levin, M.J., Liu, X.N., Maejima, Y., Mantel, S., Martín Peinado, F. J., Martínez Garzón, F. J., Mataix-Solera, J., Nikodemus, O., Ortega, C., Ortiz-Bernad, I., Pedron, F. A., Pinheiro, E. F. M., Reintam, E., Roudier, P., Rozanov, A. B., Sánchez Espinosa, J. A., Savin, I., Shalaby, M., Sujatha, M. P., Sulaeman, Y., **Taghizadeh-Mehrjardi, R.**, Tran, T. M., Valle, M. Y., Yang, J. E., Arrouays, D. 2021. A review of the world's soil museums and exhibitions. *Advances in Agronomy*, 166, 277-304. [https://doi:10.1016/bs.agron.2020.10.003](https://doi.org/10.1016/bs.agron.2020.10.003)
- 27) Ebrahimi, Z., **Taghizadeh-Mehrjardi, R.**, Kazemi, M., Nafarzadegan, A. 2021. Predicting the Ground-Level Pollutants Concentrations and Identifying the influencing Factors Using Machine Learning, Wavelet Transformation, and Remote Sensing Techniques. *Atmospheric Pollution Research*, 12, 101064. <https://doi.org/10.1016/j.apr.2020.08.029>
  - 28) Namdar, D., Goudarzi, G.R., **Taghizadeh-Mehrjardi, R.**, Bonsu Asumadu, A., Fehrest, M. 2021. Long-term effects of outdoor air pollution on mortality and morbidity–prediction using nonlinear autoregressive and artificial neural networks models. *Atmospheric Pollution Research*, 12, 46-56. <https://doi.org/10.1016/j.apr.2020.10.007>
  - 29) Soltani, S., **Taghizadeh-Mehrjardi, R.**, Kerry, R., Shirmardi, M., 2021. Effect of interceptor drainage on phosphorus transport and soil chemical characteristics under different cultivation conditions. *Paddy and Water Environment*, 66, 1-10. <https://doi.org/10.1007/s10333-021-00856-5>
  - 30) Ibrahimpour, S., Khavaninzadeh, A., **Taghizadeh-Mehrjardi, R.**, Boeck, H., Gul. 2021. Dust-related impacts of mining operations on rangeland vegetation and soil: a case study in Yazd province, Iran. *Environmental Earth Sciences*, 80, 467. <https://doi.org/10.1007/s12665-021-09758-5>
  - 31) Asaadi, M., Fathzadeh, A., Kerry, R., Ebrahimi, Z., **Taghizadeh-Mehrjardi, R.** 2021. Prediction of river suspended sediment load using machine learning models and geo-morphometric parameters. *Arabian Journal of Geosciences*, 14, 1926. <https://doi.org/10.1007/s12517-021-07922-6>
  - 32) Ebrahimi, Z., **Taghizadeh-Mehrjardi, R.**, Mirakbari, M. 2020. Evaluation of Machine Learning Models for Predicting the Temporal Variations of Dust Storm Index in Arid Regions of Iran. *Atmospheric Pollution Research*, 12, 134-147. <https://doi.org/10.1016/j.apr.2020.08.029>
  - 33) Ebrahimi, Z., **Taghizadeh-Mehrjardi, R.**, Nafarzadegan, A. 2021. Accuracy, uncertainty, and interpretability assessments of ANFIS models to predict dust concentration in semi-arid regions. *Environmental Science and Pollution Research*, 28, 6796-6810. <https://doi.org/10.1007/s11356-020-10957-z>
  - 34) Abedi, F., Amirian, A., Faraji, M., **Taghizadeh-Mehrjardi, R.**, Kerry, R., Razmjoue, D., Scholten, T. 2020. Salt dome induced soil salinity in southern Iran –prediction and mapping with averaging machine learning models. *Land Degradation and Development*, 32, 1540-1554. <https://doi.org/10.1002/ldr.3811>
  - 35) **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>

- 36) **Taghizadeh-Mehrjardi, R.**, Schmidt, K., Amirian, A., Rentschler, T., Zeraatpisheh, M., Sarmadian, F., Valavi, R., Davatgar, N., Behrens, T., Scholten, T. 2020. Improving the Spatial Prediction of Soil Organic Carbon Content in Two Contrasting Climatic Regions by Stacking Machine Learning Models and Rescanning Covariate Space. *Remote Sensing*, 12, 1095. <https://doi.org/10.3390/rs12071095>
- 37) **Taghizadeh-Mehrjardi, R.**, Nabiollahi, K., Rasouli, L., Kerry, R., Scholten, T. 2020. Land Suitability Assessment and Agricultural Production Sustainability Using Machine Learning Models. *Agronomy*, 10, 573. <https://doi.org/10.3390/agronomy10040573>
- 38) **Taghizadeh-Mehrjardi, R.**, Schmidt, K., Eftekhari, K., Behrens, T., Jamshidi, M., Davatgaar, N., Toomanian, N., Scholten, T. 2020. Synthetic resampling strategies and machine learning for digital soil mapping in Iran. *European Journal of Soil Science*, 71, 352–368. <https://doi.org/10.1111/ejss.12893>
- 39) Nabiollahi, K., Heshmat, E., Mosavi, A., Kerry, R., Zeraatpisheh, M., **Taghizadeh-Mehrjardi, R.** 2020. Assessing the Influence of Soil Quality on Rainfed Wheat Yield. *Agriculture*, 10, 469. <https://doi.org/10.3390/agriculture10100469>
- 40) Ebrahimi-Khusfi, Z., Mirakbari, M., Ebrahimi, M., **Taghizadeh-Mehrjardi, R.** 2020. Impacts of Vegetation Anomalies and Agricultural Drought on Wind Erosion over Iran from 2000 to 2018. *Applied Geography*, 125, 102330. <https://doi.org/10.1016/j.apgeog.2020.102330>
- 41) Seifi, M., Ahmadi, A., Neyshabouri, M.R., **Taghizadeh-Mehrjardi, R.**, Bahrami, H.A. 2020. Remote and Vis-NIR spectra sensing potential for soil salinization estimation in the eastern coast of Urmia hyper saline Lake, Iran. *Remote Sensing Applications: Society and Environment*, 20, 100398. <https://doi.org/10.1016/j.rsase.2020.100398>
- 42) Emadi, M., **Taghizadeh-Mehrjardi, R.**, Cherati, A., Danesh, M., Mosavi, A., Scholten, T. 2020. Predicting and Mapping of Soil Organic Carbon Using Machine Learning Algorithms in Northern Iran. *Remote Sensing*, 12, 2234. <https://doi.org/10.3390/rs12142234>
- 43) Fathizad, H., Hakimzadeh, M.A., Heung, B., Sodaiezhadeh, H., Rahmani, A., Fathabadi, A., Scholten, T., **Taghizadeh-Mehrjardi, R.** 2020. Spatio-temporal dynamic of soil quality in the Central Iranian desert modeled with Machine Learning and Digital Soil Assessment techniques. *Ecological Indicator*, 118, 106736. <https://doi.org/10.1016/j.ecolind.2020.106736>
- 44) Fathizad, H., Hakimzadeh, M., Sodaiezhadeh, H., Kerry, R., **Taghizadeh-Mehrjardi, R.** 2020. Investigation of the spatial and temporal variation of soil salinity using random forests in the central desert of Iran. *Geoderma*, 365, 114233. <https://doi.org/10.1016/j.geoderma.2020.114233>
- 45) Mahmoudzadeh, H., Matinfar, H.R., **Taghizadeh-Mehrjardi, R.**, Kerry, R. 2020. Spatial prediction of soil organic carbon using machine learning techniques in western Iran. *Geoderma Regional*, 21, e00260. <https://doi.org/10.1016/j.geodrs.2020.e00260>
- 46) Zolfaghari, A.A., Abolkheiryan, M., Soltani, A.A., **Taghizadeh-Mehrjardi, R.**, Weldeyohannese, A.O. 2020. Prediction of Soil Macronutrients using fractal parameters and Artificial Intelligence Methods. *Spanish Journal of Agricultural Research*, 18, e1104. <https://doi.org/10.5424/sjar/2020182-15460>



- 47) Zeraatpisheh, M., Jafari, A., Bagheri, M., Ayoubi, S., **Taghizadeh-Mehrjardi, R.**, Toomanian, N., Kerry, R., Xu M. 2020. Conventional and Digital Soil Mapping in Iran: Past, Present, and Future. *Catena*, 188, 104424. <https://doi:10.1016/j.catena.2019.104424>
- 48) Nasaba, M., Moradi, M., Moradi, G., **Taghizadeh-Mehrjardi, R.** 2020. Topsoil carbon stock and soil physicochemical properties in riparian forests and agricultural lands of southwestern Iran. *Eurasian Soil Science*, 53, 1389-1395. <https://doi.org/10.1134/S1064229321300013>
- 49) Jamshidi, M., Delavar, M.A., **Taghizadeh-Mehrjardi, R.**, Brungard, C. 2019. Disaggregation of conventional soil map by generating multi realizations of soil class distribution (case study: Saadat Shahr plain, Iran). *Environmental Monitoring and Assessment*, 191, 769. <https://doi:10.1007/s10661-019-7942-x>
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#### **- Editor of Book**

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#### **-Conferences**

- 1) **Taghizadeh-Mehrjardi, R.**, Rentschler, T., Schmidt, K., Cheshmberah, F., Scholten, T. 2022. Improving the spatial prediction of soil texture fractions using semi-supervised machine learning in Germany. Jahrestagung der Deutschen Bodenkundlichen Gesellschaft 2022, Trier, Germany. [Talk]
- 2) **Taghizadeh-Mehrjardi, R.**, Scholten, T. 2022. Semi-supervised learning for predicting soil properties at a national scale of Germany. 22nd World Congress of Soil Science. [Poster]

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- 4) **Taghizadeh-Mehrjardi, R.**, 2022. Google Earth Engine. Shahid-Tschamran-Universität. [vTalk] (**Webinar**)
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- 7) **Taghizadeh-Mehrjardi, R.**, Sheikhpour, R., Toomanian, N., Scholten, T., 2021. Semi-supervised learning for increasing transferability of machine learning in digital soil mapping. 3<sup>th</sup> ISMC Conference – Advances in Modeling Soil Systems. [vTalk]
- 8) **Taghizadeh-Mehrjardi, R.**, Hamzehpour, N., Hassanzadeh, M., Schmidt, K., Scholten. 2021. Enhancing accuracy and interpretability of machine learning models using super learning and permutation feature importance techniques in digital soil mapping. EGU General Assembly Conference Abstracts. [vPICO]
- 9) **Taghizadeh-Mehrjardi, R.**, Toomanian, N., Shamshirband, S., Mosavi, A., Behrens, T., Schmidt, K., Scholten, T. 2020. Predicting and mapping of soil salinity using machine learning algorithms in central arid regions of Iran. EGU General Assembly Conference Abstracts. [vTalk]
- 10) **Taghizadeh-Mehrjardi, R.** 2019. Digital mapping of soil functions using machine learning methods in Iran. 9<sup>th</sup> Bonn Humboldt Award Winners' Forum "Frontiers in Biogeography, Ecology, Anthropology, and Evolution". [Poster]
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