Mostafa Rezaali

- Lawful Permanent Resident of the United States, Gainesville, Florida, 32603
- mostafarezaali@gmail.com • Website • +1-(352)-709-5350
- Google Scholar • ResearchGate • LinkedIn • GitHub

Education

University of Florida — Gainesville, FL, USA
Ph.D. Candidate in Climate Science, Geography. GPA: 3.94/4.0. — *Aug 2022 – Present*
– Research focuses on AI in Extreme Weather (Heat Waves and Flash Drought).
– Recipient of a fully-funded Graduate Research Assistantship.
– Completed a Graduate Certificate in Atmospheric Sciences.

Qom University of Technology — Qom, Iran
M.Sc. in Civil and Environmental Engineering — *Sep 2016 – Sep 2018*
– Graduated as the top student in the department (ranked 5th out of 122 M.Sc. entries since establishment). GPA: 4.0/4.0.
– *Thesis:* Intelligent Pressure Control of Urban Water Distribution Networks Using Artificial Intelligence.

IAUKHSH — Isfahan, Iran
B.Sc. in Civil and Environmental Engineering — *Sep 2011 – Feb 2016*

Journal Publications

H-index: 10, Total Citations: 402 (as of December 2025)

Lead-Authored Publications

1. **Rezaali, M.**, Fouladi-Fard, R., O'Shaughnessy, P., Naddafi, K., & Karimi, A. (2025). Assessment of AERMOD and ADMS for NOx dispersion modeling with a combination of line and point sources. *Stochastic Environmental Research and Risk Assessment*, 1-15.
2. **Rezaali, M.**, Jahangir, M. S., Fouladi-Fard, R., & Keellings, D. (2024). An ensemble deep learning approach to spatiotemporal tropospheric ozone forecasting: A case study of Tehran, Iran. *Urban Climate, 55*, 101950.
3. **Rezaali, M.**, Fouladi-Fard, R., & Karimi, A. (2023). Performance of TANN, NARX, and GMDHT Models for Urban Water Demand Forecasting: A Case Study in a Residential Complex in Qom, Iran. *Avicenna Journal of Environmental Health Engineering, 10*(2), 85-97.
4. **Rezaali, M.**, Quilty, J., & Karimi, A. (2021). Probabilistic urban water demand forecasting using wavelet-based machine learning models. *Journal of Hydrology, 600*, 126358.
5. **Rezaali, M.**, Fouladi-Fard, R., Mojarad, H., Sorooshian, A., Mahdinia, M., et al. (2021). A wavelet-based random forest approach for indoor BTEX spatiotemporal modeling and health risk assessment. *Environmental Science and Pollution Research, 28*, 22522-22535.
6. **Rezaali, M.**, & Fouladi-Fard, R. (2021). Aerosolized SARS-CoV-2 exposure assessment: dispersion modeling with AERMOD. *Journal of Environmental Health Science and Engineering, 19*, 285-293.
7. **Rezaali, M.**, & Fouladi-Fard, R. (2021). A narrative summary of air pollution awareness: the recent modeling implications. *Journal of Environmental Health and Sustainable Development*.
8. **Rezaali, M.**, Karimi, A., Moghadam Yekta, N., & Fouladi Fard, R. (2020). Identification of temporal and spatial patterns of river water quality parameters using NLPCA and multivariate statistical techniques. *International Journal of Environmental Science and Technology, 17*, 2977-2994.
9. **Rezaali, M.**, Karimi, A., Mohammadnezhad, B., & Rasouli, A. (2019). Studying the Effect of Wavelet Transform on the Uncertainty of Artificial Neural Network-based Models and Extreme Learning Machines for the Prediction of Urban Water Demand. *Iran-Water Resources Research, 15*(4), 124-136.
10. **Rezaali, M.**, & Karimi, A. (2019). Decentralized wastewater treatment plants site selection of Qom Province

by using fuzzy logic and AHP. *Iran-Water Resources Research, 15*(1), 76-91.

Co-Authored Publications *

1. Narayanan, A., **Rezaali, M.**, Bunting, E.L., & Keellings, D. (2025). It's getting hot in here: Spatial impact of humidity on heat wave severity in the US. *Science of The Total Environment, 963*, 178397.
2. Farajollahi, M., Fahiminia, M., Fouladi-Fard, R., **Rezaali, M.**, & Sorooshian, A. (2024). Human and ecological risk assessment, geo-accumulation, and source apportionment of road dust heavy metals in a semi-arid region of central Iran. *International Journal of Environmental Analytical Chemistry, 104*(18), 6495-6518.
3. Rahimi, N.R., Fouladi-Fard, R., Aali, R., Shahryari, A., **Rezaali, M.**, et al. (2021). Bidirectional association between COVID-19 and the environment: a systematic review. *Environmental Research, 194*, 110692.

** Additional peer-reviewed co-authored journal publications are available but not listed here.*

Technical Skills

Programming Data Analysis:
- **Advanced:** MATLAB (Big data analysis, NetCDF/4D matrix processing), Python (Pytorch, Scikit-learn, NumPy, Pandas, Jupyter).
- **Proficient:** R, Linux Environment, Arcpy, LaTeX.
- **Familiar:** C#.

Environmental Climate Modeling Software:
- **Atmospheric:** WRF-ARW, AERMOD, EPA PMF.
- **Hydrologic/Hydraulic:** HEC-RAS, EPANET2, WaterGEMS, SewerGEMS, CE-QUAL-W2.
- **Geospatial:** ArcGIS, GRASS GIS, IDRISI (TerrSet).

Research Experience

Research Assistant Dr. David Keellings, University of Florida *Aug 2022 – Present*
- Develop and implement novel ensemble deep learning models for spatiotemporal forecasting of extreme weather phenomena and atmospheric pollutants (e.g., tropospheric ozone).
- Process and analyze large-scale climate datasets (NetCDF, GRIB) using Python (TensorFlow, Scikit-learn, xarray) and MATLAB for model training and validation.
- Contribute to research on hydroclimatology, quantifying the impact of climate change on water resources and atmospheric conditions.

Teaching Mentoring

Invited Lecturer University of Florida *April 2025*
- Guest lecture on "Deep Learning Applications in Climate Science" for graduate-level climate modeling course. Topics covered: CNN, LSTM, and hybrid convLSTM architectures for spatiotemporal climate data analysis.

Invited Lecturer University of Florida *Spring 2025*
- Guest lecture on "Climate Change Impacts on Future Plant Distributions" for Geography of Crops course. Presented research methodologies including data acquisition, processing, mapping techniques, and challenges in climate-vegetation modeling.

NSF LEAP REU Mentor University of Columbia *May 2025 – August 2nd*
- Co-advised on thesis topic: "Application of neural network models for predicting impact of climate change on dust phenomenon in the southwestern provinces of Iran."

M.Sc. Student Advisor Alborz University of Medical Sciences *May 2021 – Present*
- Co-advised on thesis topic: "Application of neural network models for predicting impact of climate change on dust phenomenon in the southwestern provinces of Iran."

M.Sc. Student Advisor Qom University of Medical Sciences *May 2019 – Oct 2019*
– Co-advised on thesis topic: "Tropospheric Ozone Concentration Prediction Using Deep Learning Models."

Workshop Tutor Yazd University of Medical Sciences
– Led a technical workshop on the use of the AERMOD air dispersion model for environmental health students.

Honors & Awards

Florida Regional Judge - Junior Science & Humanities Symposium, 2025
NSF LEAP Momentum Fellowship - Summer 2025
University of Houston Presidential Fellowship - August 2022
NSF LEAP Travel Award - December 2025
Member, Elite Graduates Program, Iranian National Elites Foundation

Professional Service

Journal Reviewer, Scientific Reports
Journal Reviewer, Journal of Hydrology
Journal Reviewer, Springer Nature Applied Sciences (SNAS)
and many other journals ...

References

David Keellings *, University of Florida, Advisor*
Email: djkeellings@ufl.edu
Shawn Li, *Columbia University, Research Project Supervisor*
Email: sl5487@columbia.edu