

# MOSTAFA REZAALI

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## EDUCATION

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### University of Florida

Gainesville, FL, USA

Ph.D. Candidate in Climate Science, Geography

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

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*H-index: 10, Total Citations: 384 (as of November 2025)*

### Lead-Authored Publications

1. **Rezaali, M.**, Fouladi-Fard, R., O'Shaughnessy, P., Naddafi, K., & Karimi, A. (2025). Assessment of AERMOD and ADMS for NO<sub>x</sub> 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 NLPDA 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

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### Programming Data Analysis:

- **Advanced:** MATLAB (Big data analysis, NetCDF/4D matrix processing), Python (Pytorch, Scikit-learn, NumPy, Pandas, Jupyter).
- **Proficient:** R, Linux Environment, Arcpy, L<sup>A</sup>T<sub>E</sub>X.
- **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

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**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

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- 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

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**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

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

## REFERENCES

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