



Affiliation

Associate Professor

Department of Civil Eng.
University of Maragheh
East Azerbaijan, Iran



<https://scholar.google.com/citations?user=WF7dB4AAAAJ&hl=en>

H-Index = 24

ORCID

<https://orcid.org/0000-0002-9018-547X>

Scopus®

ID: 56659405000



s.sadeghfam@maragheh.ac.ir
s.sadeghfam@khazar.org
s.sadeghfam@gmail.com



Office: (+98) 41-3727 8900
(Ext. 157)

Mobile: (+98) 914-419-0996

Sina Sadeghfam

Associate Professor, University of Maragheh, East Azerbaijan, Iran

PHD EDUCATION AND THESIS

PhD

September 2012 – September 2016

Civil Engineering

University of Tabriz, Tabriz, East Azerbaijan, Iran

Thesis Title: Stochastic Quantitative-Qualitative Modeling and Risk Analysis of Maragheh-Bonab Plain Aquifer

RESEARCH INTEREST

- Groundwater and Surface Water Modeling
- Environmental Risk and Vulnerability
- Drought and Hydroclimate
- Land Subsidence
- Water Pollution
- AI Applications in Water Resources

ADMINISTRATIVE ROLE

Director of the Technology Incubator Center of Maragheh

July 2022 – February 2025

Dean of the Faculty of Engineering at the University of Maragheh

October 2025 – ongoing

EDITORIAL EXPERIENCE

- Associate Editor for **SoftwareX** (Elsevier)
<https://www.sciencedirect.com/journal/softwarex/about/editorial-board>
- Editorial board member in **Hydrogeology**
(affiliated with the University of Tabriz and the Geological Society of Iran)
<https://hydro.tabrizu.ac.ir/journal/editorial.board?lang=en>
- Editorial board member in **Journal of Soft Computing in Water Engineering**
(affiliated with the University of Zabol)
<https://scwe.uoz.ac.ir/journal/editorial.board>
- Editorial board member in **Turkish Journal of Hydraulic**
<https://dergipark.org.tr/en/pub/turhidder/board>

AUTHORED A BOOK

- **Data Series Modeling** (Publisher: University of Tabriz - 2015)
- **Risk, Uncertainty and Reliability in Water and Environmental Issues** (Publisher: University of Maragheh - 2026)

LIST OF JOURNALS WHERE I HAVE ACTED AS REVIEWER

(VERIFIABLE BY ORCID: [HTTPS://ORCID.ORG/0000-0002-9018-547X](https://orcid.org/0000-0002-9018-547X))

- Applied sciences
 - Arabian journal of geosciences
 - Computers and electronics in agriculture
 - Earth science informatics
 - Engineering science and technology, an international journal
 - Environment, development and sustainability
 - Environmental Modeling & Assessment
 - Environmental science and pollution research international
 - Groundwater for sustainable development
 - International journal of environmental science and technology
 - Journal of contaminant hydrology
 - Journal of hydrology
 - Journal of irrigation and drainage engineering
 - Natural hazards
 - Science of the total environment
 - SoftwareX
 - Water resources management
 - Water
-

JOURNAL PUBLICATION

- **Sadeghfam, S.**, Bayrami, A., Moazamnia, M., Kantoush, S. A., Huang, J. J., & Nourani, V. (2026). Formulating Z-number for identifying suitable areas for groundwater recharge and enhancing reliability in decision-making. *Geomatics, Natural Hazards and Risk*, 17(1), 2608917.
- Azizi, A., Vaighan, A. A., **Sadeghfam, S.**, & Khatibi, R. (2026). Introducing the STOP-SaltWind framework enhanced by deep neural networks to investigate aerosol dispersion in Lake Urmia Basin. *Journal of Hydrology: Regional Studies*, 64, 103127.
- Hasan Mohamed, G., Asaad Tayeb, F., Azari, M., & **Sadeghfam, S.** (2026). Introducing thermal sensitivity to devegetation using an AI-based framework for capturing urbanization stress. *International Journal of Remote Sensing*, 1-17.
- Sedghi, Z., Nadiri, A. A., **Sadeghfam, S.**, Khatibi, R., Barzegar, R., & Nikoo, M. R. (2026). A Study of Fluoride Contamination in the Aquifer Along 'Sari Su' and Zengimar Plains, West Azerbaijan, Iran-Implications for Sustainable Water Infrastructure. *International Journal of Sustainability and Risk Control*, 2(1), 41-50.
- Sadeghi, H., **Sadeghfam, S.**, Sharafati, A., & Seyfari, Y. (2026). Prediction of urban water consumption using AI-based multiple modeling based on deep learning. *International Journal of Environmental Science and Technology*, 23(2), 92.
- Ghayurdoost, F., Zarghami, M., **Sadeghfam, S.**, Jabraili-Andaryan, N., Nikmaram, S., Baba, A., ... & Mosaferi, M. (2026). Hydrogeochemical assessment and health risks of groundwater in sahand volcanic foreland (NW Iran): Arsenic speciation and heavy metal risk indicators. *Ecotoxicology and Environmental Safety*, 310, 119746.

- Tayeb, F. A., Mohamed, G. H., Azari, M., & **Sadeghfam, S.** (2025). Bayesian Merging-Based Framework for Reducing Subjectivity in Groundwater Potential Mapping: Insights from a Fuzzy Catastrophe Comparison. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 1-13.
- **Sadeghfam, S.**, Mohammadi, S., Nadiri, A. A., Ehsanitabar, A., Venkatramanan, S., Islam, A. R. M. T., ... & Rahmati, M. (2025). Subsidence vulnerability assessment due to groundwater over-abstraction using AI-based multiple cluster analysis. *Environmental Modelling & Software*, 194, 106679.
- **Sadeghfam, S.**, Teihooie, S., Khatibi, R., & Moazamnia, M. (2025). Aggregated drought characteristics using particle swarm optimisation incorporating duration, severity, reliability, resilience, and vulnerability characteristics. *Journal of Water and Climate Change*, 16(9), 2667-2689.
- **Sadeghfam, S.**, Farmani, H., & Mirabbasi, R. (2025). Developing reservoir drought index and conducting copula-based frequency analysis for Lake Urmia basin in Iran. *Journal of Hydrology: Regional Studies*, 60, 102476.
- Khorasani Alamdari, M., **Sadeghfam, S.**, Ehsanitabar, A., Nadiri, A. A., Darvishi, S., Alizadeh Noughani, M., & Hejazi, R. (2025). Groundwater artificial recharge indexing using fuzzy catastrophe membership functions. *Applied Geomatics*, 1-15.
- Ehsanitabar, A., Hassanzadeh, Y., Aalami, M., & **Sadeghfam, S.** (2025). Agent-based modeling for demand management of reservoirs considering social and hydrological interactions under uncertainty. *Journal of Environmental Management*, 380, 125089.
- Ahmadi Lavin, J., **Sadeghfam, S.**, Sharafati, A., & Neshat, A. (2025). A formulation for assessing the risk of anthropogenic drought based on drought characteristics and socioeconomic and physical factors. *Vadose Zone Journal*, 24(2), e70014.
- **Sadeghfam, S.**, Fahmfam, N., Khatibi, R., Crookston, B. M., Vadiati, M., & Moazamnia, M. (2025). Introducing Reservoir Sustainability Indexing to Investigate Reservoir Operations and Piloting it at the Basin of Lake Urmia with Sparse Data. *Environmental and Sustainability Indicators*, 100577.
- **Sadeghfam, S.**, Amjadi, S., Abadi, B., & Moazamnia, M. (2025). Risk assessment of urban water network triggered by social behavior due to rising water demand within households. *AQUA—Water Infrastructure, Ecosystems and Society*, jws2025283.
- Aminvash, E., Daneshfaraz, R., Sume, V., **Sadeghfam, S.**, & Abraham, J. (2024). On the Multiple Steady Flow States in Spindle Shaped Geometry of Bridge Foundations. *Journal of Applied Fluid Mechanics*, 18(1), 1-15.
- Moazamnia, M., **Sadeghfam, S.**, Jabraili-Andariyan, N., Nadiri, A. A., Mirabbasi, R., & Noori, R. (2024). Probabilistic human health risk assessment for arsenic, nickel and lead exposures based on two-dimensional Monte Carlo simulation. *Groundwater for Sustainable Development*, 27, 101312.
- **Sadeghfam, S.**, Rahmani, M. S., Moazamnia, M., & Morshedloo, M. R. (2024). Mapping climate suitability index for rainfed cultivation of medicinal plants by developing an AI-based probabilistic framework. *Scientific Reports*, 14(1), 20413.

- Bagheri, A., **Sadeghfam, S.**, Karimzadeh, S., & Nadiri, A. A. (2024). Subsidence vulnerability indexing using convolutional neural networks based on clustering and regression modeling strategies. *Groundwater for Sustainable Development*, 25, 101180.
- Mohammad Pourian Bazzaz, P., **Sadeghfam, S.**, Khatibi, R., & Nourani, V. (2024). A drought study in the basin of Lake Urmia under climate change scenarios with higher spatial resolution to understand the resilience of the basin. *Journal of Water and Climate Change*, 15(2), 453-475.
- **Sadeghfam, S.**, Saghayeshi, H., & Moazamnia, M. (2024). Mapping cultivation potential index of rainfed wheat from climatic perspective using Shannon entropy catastrophe scheme. *Computers and Electronics in Agriculture*, 217, 108616.
- Bagheri, A., **Sadeghfam, S.**, Karimzadeh, S., & Nadiri, A. A. (2024). Subsidence vulnerability indexing using convolutional neural networks based on clustering and regression modeling strategies. *Groundwater for Sustainable Development*, 25, 101180.
- Mohammad Pourian Bazzaz, P., **Sadeghfam, S.**, Khatibi, R., & Nourani, V. (2024). A drought study in the basin of Lake Urmia under climate change scenarios with higher spatial resolution to understand the resilience of the basin. *Journal of Water and Climate Change*, 15(2), 453-475.
- **Sadeghfam, S.**, Shams, H., Crookston, B. M., Babaeian Amini, A., & Daneshfaraz, R. (2023). Reliability Analysis of Water Supply Channels for Conveying Design Flow. *Journal of Irrigation and Drainage Engineering*, 149(12), 04023028.
- **Sadeghfam, S.**, Moazamnia, M., & Khatibi, R. (2023). Mathematical Treatment of Bimodality for the Safety Factor in Riverbank Stability Analysis Using Cusp Catastrophe. *International Journal of Geomechanics*, 23(11), 06023020.
- Abadi, B., **Sadeghfam, S.**, Ehsanitabar, A., & Nadiri, A. A. (2023). Investigating socio-economic and hydrological sustainability of ancient Qanat water systems in arid regions of central Iran. *Groundwater for Sustainable Development*, 23, 100988.
- Alamdari, M. K., Nadiri, A. A., Ghaforian, H., & **Sadeghfam, S.** (2023). Removal of arsenic with functionalized multi-walled carbon nanotubes (MWCNTs-COOH) using the magnetic method (Fe₃O₄) from aqueous solutions. *RSC advances*, 13(36), 25284-25295.
- Daneshfaraz, R., Aminvash, E., & **Sadeghfam, S.** (2023). Laboratory and Theoretical Study of Hysteretic Effects on Hydraulic Characteristics of Flow at the Site of Smooth to Rough Bed Conversion. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 1-13.
- Gharekhani, M., Nadiri, A. A., Khatibi, R., Nikoo, M. R., Barzegar, R., **Sadeghfam, S.**, & Moghaddam, A. A. (2023). Quantifying the groundwater total contamination risk using an inclusive multi-level modelling strategy. *Journal of Environmental Management*, 332, 117287.
- Jani, R., Khatibi, R., **Sadeghfam, S.**, & Zarrinbal, E. (2023). Climate zoning under climate change scenarios in the basin of Lake Urmia and in vicinity basins. *Theoretical and Applied Climatology*, 152(1-2), 181-199.

- Nadiri, A. A., Barzegar, R., **Sadeghfam, S.**, & Rostami, A. A. (2022). Developing a Data-Fused Water Quality Index Based on Artificial Intelligence Models to Mitigate Conflicts between GQI and GWQI. *Water*, 14(19), 3185.
- Nadiri, A. A., Moazamnia, M., **Sadeghfam, S.**, Gnanachandrasamy, G., & Venkatramanan, S. (2022). Formulating Convolutional Neural Network for mapping total aquifer vulnerability to pollution. *Environmental Pollution*, 304, 119208.
- Nadiri, A. A., Habibi, I., Gharekhani, M., **Sadeghfam, S.**, Barzegar, R., & Karimzadeh, S. (2022). Introducing dynamic land subsidence index based on the ALPRIFT framework using artificial intelligence techniques. *Earth Science Informatics*, 15(2), 1007-1021.
- **Sadeghfam, S.**, Mirahmadi, R., Khatibi, R., Mirabbasi, R., & Nadiri, A. A. (2022). Investigating meteorological/groundwater droughts by copula to study anthropogenic impacts. *Scientific Reports*, 12(1), 8285.
- Hassanpour, N., **Sadeghfam, S.**, Crookston, B., & Abdollahpour, M. (2022). Predicting hydraulic jump characteristics in a gradually expanding stilling basin with roughness elements by Sugeno Fuzzy Logic. *Journal of Hydroinformatics*, 24(3), 659-676.
- Gharekhani, M., Nadiri, A. A., Khatibi, R., **Sadeghfam, S.**, & Moghaddam, A. A. (2022). A study of uncertainties in groundwater vulnerability modelling using Bayesian model averaging (BMA). *Journal of environmental management*, 303, 114168.
- Moazamnia, M., Hassanzadeh, Y., **Sadeghfam, S.**, & Nadiri, A. A. (2022). Formulating GA-SOM as a multivariate clustering tool for managing heterogeneity of aquifers in prediction of groundwater level fluctuation by SVM model. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 46(1), 555-571.
- **Sadeghfam, S.**, Bagheri, A., Razzagh, S., Nadiri, A. A., Vadiati, M., Senapathi, V., & Sekar, S. (2022). Hydrochemical analysis of seawater intrusion by graphical techniques in coastal aquifers to delineate vulnerable areas. In *Groundwater Contamination in Coastal Aquifers* (pp. 91-104). Elsevier.
- Sedghi, Z., Rostami, A. A., Khatibi, R., Nadiri, A. A., **Sadeghfam, S.**, & Abdoollahi, A. (2022). Mapping and aggregating groundwater quality indices for aquifer management using Inclusive Multiple Modeling practices. In *Risk, Reliability and Sustainable Remediation in the Field of Civil and Environmental Engineering* (pp. 155-182). Elsevier.
- Gharekhani, M., Khatibi, R., Nadiri, A. A., & **Sadeghfam, S.** (2022). Aggregating risks from aquifer contamination and subsidence by inclusive multiple modeling practices. In *Risk, Reliability and Sustainable Remediation in the Field of Civil and Environmental Engineering* (pp. 133-153). Elsevier.
- **Sadeghfam, S.**, & Abadi, B. (2021). Decision-making process of partnership in establishing and managing of rural wastewater treatment plants: Using intentional and geographical-spatial location data. *Water Research*, 197, 117096.
- **Sadeghfam, S.**, Abdi, M., Khatibi, R., & Nadiri, A. A. (2021). An investigation into uncertainties within Human Health Risk Assessment to gain an insight into plans to mitigate impacts of arsenic contamination. *Journal of Cleaner Production*, 127667.
- Razzagh, S., Nadiri, A. A., Khatibi, R., **Sadeghfam, S.**, Senapathi, V., & Sekar, S. (2021). An investigation to human health risks from multiple contaminants and multiple origins by

introducing 'Total Information Management'. *Environmental Science and Pollution Research*, 28(15), 18702-18724.

- **Sadeghfam, S.**, Khatibi, R., Nadiri, A. A., & Ghodsi, K. (2021). Next Stages in Aquifer Vulnerability Studies by Integrating Risk Indexing with Understanding Uncertainties by using Generalised Likelihood Uncertainty Estimation. *Exposure and Health*, 1-15.
- Daneshfaraz, R., Hasannia, V., Norouzi, R., Sihag, P., **Sadeghfam, S.**, & Abraham, J. (2021). Investigating the Effect of Horizontal Screen on Hydraulic Parameters of Vertical Drop. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 1-9.
- Daneshfaraz, R., **Sadeghfam, S.**, & Tahni, A. (2020). Experimental investigation of screen as energy dissipators in the movable-bed channel. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 44(4), 1237-1246.
- **Sadeghfam, S.**, Nourbakhsh Khiyabani, F., Khatibi, R., & Daneshfaraz, R. (2020). A study of land subsidence problems by ALPRIFT for vulnerability indexing and risk indexing and treating subjectivity by strategy at two levels. *Journal of Hydroinformatics*, 22(6), 1640-1662.
- **Sadeghfam, S.**, Khatibi, R., Dadashi, S., & Nadiri, A. A. (2020). Transforming subsidence vulnerability indexing based on ALPRIFT into risk indexing using a new fuzzy-catastrophe scheme. *Environmental Impact Assessment Review*, 82, 106352.
- Moazamnia, M., Hassanzadeh, Y., Nadiri, A. A., & **Sadeghfam, S.** (2020). Vulnerability indexing to saltwater intrusion from models at two levels using artificial intelligence multiple model (AIMM). *Journal of environmental management*, 255, 109871.
- **Sadeghfam, S.**, Khatibi, R., Daneshfaraz, R., & Rashidi, H. B. (2020). Transforming vulnerability indexing for saltwater intrusion into risk indexing through a fuzzy catastrophe scheme. *Water Resources Management*, 34(1), 175-194.
- **Sadeghfam, S.**, Daneshfaraz, R., Khatibi, R., & Minaei, O. (2019). Experimental studies on scour of supercritical flow jets in upstream of screens and modelling scouring dimensions using artificial intelligence to combine multiple models (AIMM). *Journal of Hydroinformatics*, 21(5), 893-907.
- Moazamnia, M., Hassanzadeh, Y., Nadiri, A. A., Khatibi, R., & **Sadeghfam, S.** (2019). Formulating a strategy to combine artificial intelligence models using Bayesian model averaging to study a distressed aquifer with sparse data availability. *Journal of Hydrology*, 571, 765-781.
- **Sadeghfam, S.**, Hassanzadeh, Y., Khatibi, R., Nadiri, A. A., & Moazamnia, M. (2019). Groundwater remediation through pump-treat-inject technology using optimum control by artificial intelligence (OCAI). *Water Resources Management*, 33(3), 1123-1145.
- **Sadeghfam, S.**, Hassanzadeh, Y., Khatibi, R., Moazamnia, M., & Nadiri, A. A. (2018). Introducing a risk aggregation rationale for mapping risks to aquifers from point-and diffuse-sources—proof-of-concept using contamination data from industrial lagoons. *Environmental Impact Assessment Review*, 72, 88-98.
- **Sadeghfam, S.**, Ehsanitabar, A., Khatibi, R., & Daneshfaraz, R. (2018). Investigating 'risk' of groundwater drought occurrences by using reliability analysis. *Ecological Indicators*, 94, 170-184.

- Nadiri, A. A., Sedghi, Z., Khatibi, R., & **Sadeghfam, S.** (2018). Mapping specific vulnerability of multiple confined and unconfined aquifers by using artificial intelligence to learn from multiple DRASTIC frameworks. *Journal of Environmental Management*, In Press.
- Nadiri, A. A., **Sadeghfam, S.**, Gharekhani, M., Khatibi, R., & Akbari, E. (2018). Introducing the risk aggregation problem to aquifers exposed to impacts of anthropogenic and geogenic origins on a modular basis using 'risk cells'. *Journal of environmental management*, 217, 654-667.
- Nadiri, A. A., Gharekhani, M., Khatibi, R., **Sadeghfam, S.**, & Moghaddam, A. A. (2017). Groundwater vulnerability indices conditioned by supervised intelligence committee machine (SICM). *Science of the Total Environment*, 574, 691-706.
- **Sadeghfam, S.**, Khatibi, R., Hassanzadeh, Y., Daneshfaraz, R., & Ghorbani, M. A. (2017). Forced hydraulic jumps described by classic hydraulic equations reproducing cusp catastrophe features. *Arabian Journal for Science and Engineering*, 42(9), 4169-4179.
- Daneshfaraz, R., **Sadeghfam, S.**, & Ghahramanzadeh, A. (2017). Three-dimensional numerical investigation of flow through screens as energy dissipators. *Canadian Journal of Civil Engineering*, 44(10), 850-859.
- **Sadeghfam, S.**, Hassanzadeh, Y., Nadiri, A. A., & Khatibi, R. (2016). Mapping groundwater potential field using catastrophe fuzzy membership functions and Jenks optimization method: a case study of Maragheh-Bonab plain, Iran. *Environmental Earth Sciences*, 75(7), 545.
- **Sadeghfam, S.**, Hassanzadeh, Y., Nadiri, A. A., & Zarghami, M. (2016). Localization of groundwater vulnerability assessment using catastrophe theory. *Water resources management*, 30(13), 4585-4601.
- **Sadeghfam, S.**, Akhtari, A. A., Daneshfaraz, R., & Tayfur, G. (2015). Experimental investigation of screens as energy dissipaters in submerged hydraulic jump. *Turkish Journal of Engineering and Environmental Sciences*, 38(2), 126-138.