Curriculum Vitae

Mohammad Reza Nikoo

Associate Professor, Department of Civil and Architectural Engineering, College of Engineering, Sultan Qaboos University, Muscat, Oman

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1. PERSONAL INFORMATION

Date of Birth: April 12, 1983
Place of Birth: Shiraz, Iran
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Google Scholar Profile: http://scholar.google.com/citations?user=tbsw9yAAAAAJ&hl=en

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2. H-INDEX *

(* A scholar with an index of *H* has published *H* papers each of which has been cited by others at least *H* times)

- **H-Index** in Google Scholar: **40** (**Citations: 4914,** based on Google Scholar)

3. HONORS

- Honorary Visiting Fellow at the University of Technology Sydney, Australia, during the last three consecutive years (2022, 2023 and 2024)
- Top-ranked Civil Engineer in Oman in the 2024 Scientists Ranking (https://www.adscientificindex.com/scientist/mohammad-reza-nikoo/419647)
- The Iran's Eminent Young Scientist, 2020 (Selected by Vice-Presidency for Science and Technology)
- Top Researcher, Shiraz University, 2020
- Top Researcher, Shiraz University, 2019
- Top Researcher, Shiraz University, 2018

- The Honor of the Superior Graduate PhD Student of Education-Research- and Innovation (Selected by Iranian Federation of Young Elite, 2013)
- Best Ph.D. dissertation in the field of Water Engineering Selected by Iranian Hydraulic Association (2013).
- Author of the best journal paper in the field of water engineering published by an Iranian researcher, The Second Iran's Water Festival (2009).
- Member of Iranian Federation of Young Elite (2008-present)
- Top M. Sc. student, Water Resources Engineering (Civil Engineering), University of Tehran, Tehran, Iran (2008).
- Top Bachelor student, Water Engineering, University of Tehran, College of Aburaihan, Tehran, Iran (2006).

4. EDUCATION

1) **Ph.D.:** Civil Engineering (Water Resources and Environmental Systems Management), July 16, 2012, University of Tehran, Tehran, Iran (Top Student in PhD, GPA: 18.45 out of 20 - PhD Thesis was ranked as Excellent)
    - Title of Ph.D. Thesis: "Developing a Stochastic Model for Water and Waste Load Allocation in River Basins: Application of Game Theory" (Supervisor: Prof. Reza Kerachian).
    - The Best Iranian Ph.D. Dissertation in 2013 (Selected by Iranian Hydraulic Association).
    - The Best Iranian Ph.D. Dissertation in 2015 for the second time (Selected by Vice-Presidency for Science and Technology).
2) **Master of Science:** Civil Engineering- Water Resources Engineering, July 5, 2008, University of Tehran, Tehran, Iran (Top Student, GPA: 18.23 out of 20)
    - Title of Master of Science Thesis: " Developing a Fuzzy-Stochastic Model for Water Quality Trading in River Systems" (Supervisors: Prof. Reza Kerachian).
3) **Bachelor of Science**, Water Engineering, 2006, University of Tehran, College of Aburaihan, Iran (Top Student, GPA: 18.47 out of 20)

5. WORK EXPERIENCES

- **Associate Professor,** Department of Civil and Architectural Engineering, Sultan Qaboos University, Muscat, Oman, **2021–present**.
- **Associate Professor,** Department of Civil and Environmental Engineering, Shiraz University, Shiraz, Iran, **2017–2020**.
- **Research Consultant, Sultan Qaboos University,** Oman, **September, 2020 - January, 2021** (A consultant research on mapping, monitoring, and mitigation of land degradation in Oman).
- **Research Visit, Sultan Qaboos University,** Water Research Center, Oman, **January, 2020 - February, 2020** (A short visit for developing an evaporation pond's optimization model).
- **Post Doc. position,** Sultan Qaboos University, Water Research Center, Muscat, Oman, **March, 2019 - September, 2019.**
- **Assistant Professor,** Department of Civil and Environmental Engineering, **Shiraz University**, Shiraz, **Iran, 2013–2017**.

- **Representative of Fars Federation of Young Elite** in civil and infrastructure research committee of Fars province, **Iran, 2012-2013**.
- **Advisor of Golestan Regional Water Authority** in reservoir water quality and environmental management, **Iran, 2013–2014** (Narmab Reservoir Water Quality Studies).

6. RESEARCH INTERESTS

- Machine learning and Data science
- Water Resources Systems Analysis and Planning
- Wave Energy Convertors (WEC) Optimization
- Reservoir Water Quality Modeling
- Application of Game Theory and Bargaining methods in Water Resources Management
- Water Quality Monitoring (Groundwater Resources, Reservoirs and Rivers)
- Modern Optimization (e.g. HBMO, PSO, …) and Simulation Techniques
- Water Quality Assessment and Water and Waste Load Trading
- Application of Remote Sensing (RS) in Water Resources Management

7. RESEARCH PROJECTS

1) Grants from 2021-Present as Associate Professor at SQU:

- Multiple Criteria Decision Analysis for the Sustainable Management of the Omani coast: Sohar and Salalah Ports as Case study, ***TRC Strategic grant*****,** Aug 2024-present (**Co-PI**).

- Quantification, Qualification, and Risk Assessment of Microplastic in Wastewater Treatment Plants: Different Technologies in Oman. ***HM Strategic Grant***, 2024-present (**Co-PI**).

- Occurrence and distribution of organic and inorganic pollutants in water reservoir: A Case study Wadi Dayqah Dam, ***SQU Internal Research Grant***, 2024-present (**Co-PI**).

- Assessing Climate Change Impacts on Crop Production and Land and Water Resources in the Sultanate of Oman. ***Consultancy Project, FAO Oman***, 2023-present (Main **Co-I**).

- Revolutionizing Oman's SEZs sustainability: Valorization of Pollutant Streams to Products by a Bioelectrochemical Systems-based Biorefinery, ***TRC Strategic grant*****,** Aug 2024-present (**Co-I**).

- Impact of desalination for irrigation on seawater dynamics in the coastal aquifers of Al-Batinah within the context of climate change. ***TRC Strategic grant*****,** 2024-present (Main **Co-I**).

- Reservoir Water Quality Improvement Using Optimized Strategic Selective Withdrawal and Hypolimnetic Aeration Considering Climate Changes: A Case Study, Wadi Dayqah Dam, Oman. ***HM Strategic Grant***, 2022-present (**PI**).

- Flash Flood Early Warning and Monitoring System for Disaster Management in Al-Batina Region. ***HM Strategic Grant***, 2022-present (**Co-PI**).

- Optimal wave farm deployment along coast of Oman utilizing wave generation models **Consultancy Project, Under review**, 2024-present (**PI**).

- Developing a Strategic Methodology for Leakage Detection and Localization Under Uncertainty for a better Water Resilience. ***International Co-Funding Program***, 2022 (**PI-Under review**).

- Secure Drinking Water Supply by Optimal Management of Water Distribution Network: Optimal Instruction for Pipes Replacement and Repair, ***TRC grant***, 2022 (**PI-Under review**).

- Integrated Management Systems of Water-Energy Nexus in Nizwa City, ***TRC grant***, 2022 (**Co-PI-Under review**).

- NEVA Method for Determining the Flash Flood Return Period in Oman, ***SQU Deanship of research grant*** (***Internal Grant***), 2022 (**PI**).

2) Previous Grants

- A Risk Analysis Model for Security Management in Water Treatment Plants, Case Study: Salman Farsi Water Treatment Plant, Water and Wastewater Management Company, 2018-2020 (**PI**).
- Investigation of Future Water Supply of Fars Province Considering Water Resources and Demands, Fars Province Water Resources Management Company, 2019-2021 (**PI)**.
- "Evaluating the impacts of urbanization projects on the quantity and quality of the groundwater in the Kan river region and proposing some improving strategies", Iranian Water Resources Management Company and Tehran Regional Water Board Company, Iran Ministry of Energy, 2014-2015 (**Co-investigator**).
- "Conjunctive Use Management of Surface and Ground Water Resources and Determination of Different Scenarios in Wet and Dry Years: A Case Study, Salmane Farsi Dam, Ghare Ghaj River and Groundwater Resource of the Study Area", Fars Province Water and Wastewater Company, 2013-2014 (**Co-investigator**).
- "Determination of the maximum allocatable water in the Karkheh river basin under different development scenarios using interval optimization", Iranian Water Resources Management Company and Lorestan Regional Water Board Company, 2012-2014 (**Co-investigator**).
- "Trading Pollutant Discharge Permits for River Water Quality Management", Iranian Water Resources Management Company, Iran Ministry of Energy, 2010-2012 (**Co-investigator).**
- "Updating Operating Rules of 15-khordad Dam in Existing Condition and Considering the Inflow from the Dez basin", Iranian Water Resources Management Company and Qom Regional Water Board Company, Iran Ministry of Energy, 2010-2012 (**Co-investigator**).
- "Developing a stochastic multi-objective optimization model for design of a groundwater monitoring system for determining the characteristics of pollution sources, Caste study: A section of the Tehran refinery", Iranian Water Resources Management Company and Tehran Regional Water Board Company, Iran Ministry of Energy, 2009-2011 (**Co-investigator**).
- "Water Quality Zoning in Surface and Groundwater Resources using Probabilistic Support Vector Machines and Comparing the Results with the Results of Existing Water Quality Zoning Models", Iranian Water Resources Management Company, Iran Ministry of Energy, 2008-2011 (**Co-investigator**).

- "River Water Quality Zoning using Fuzzy Inference Systems and Bayesian Networks", Iranian Water Resources Management Company and Tehran Water Board Company, Iran Ministry of Energy, **2008-2010** (**Co-investigator**).

8. Reviewer of International Journals

- Water Research
- Scientific Report- Nature Index
- Journal of Water Resources Planning and Management (ASCE)
- Journal of Hydrologic Engineering (ASCE)
- International Journal of Remote Sensing (Taylor & Francis)
- Journal of Hydrology
- Journal of the American Water Resources Association
- Applied Soft Computing (Elsevier)
- Sustainable Cities and Society (Elsevier)
- Hydrological Sciences Journal (Taylor & Francis)
- Urban Water Journal
- Neural Computing and Applications (Springer)
- Science of the Total Environment
- Journal of Environmental Management (Elsevier)
- Water Resources Management (Springer)
- Environmental Earth Sciences (Springer)
- Journal of Hydroinformatics (IWA)
- Environmental Monitoring and Assessment (Springer)
- Journal of Agricultural Science and Technology
- Journal of Environmental Health Science and Engineering
- Ocean Engineering (Elsevier)
- Hydrological Sciences Journal
- Iranian Journal of Science and Technology
- Environmental Energy and Economics International Research Journal
- Marine Georesources & Geotechnology (Taylor & Francis)

9. PUBLICATIONS

Book Chapters:

1. Shadmani, A., **Nikoo, M.R.,** Gandomi, A.H. **(2023)** "Robust Optimization of PTO Settings for Point Absorber Wave Energy Converter", In: Kulkarni, A.J., Gandomi, A.H. (eds) *Handbook of Formal Optimization*. Springer, Singapore. **https://doi.org/10.1007/978-981-19-8851-6_14-1**

2. Bakhtiari P.H., **Nikoo, M.R.,** and A.H., Gandomi **(2023)** "Evolutionary computation techniques for optimal response actions against water distribution networks contamination", *Comprehensive Metaheuristics Algorithms and Applications*, **Chapter 4.** Pages 65-84. **https://doi.org/10.1016/B978-0-323-91781-0.00004-1**

3. Yousefi-Khoshqalb E., **Nikoo, M.R.,** and A.H., Gandomi **(2023)** "Optimal deployment of sensors for leakage detection in water distribution systems using metaheuristics", *Comprehensive Metaheuristics Algorithms and Applications*, **Chapter 14.** Pages 269-291. **https://doi.org/10.1016/B978-0-323-91781-0.00014-4**

4. Geranmehr M., **Nikoo, M.R.,** G., Al-Rawas, K., Al-Jabri, and A.H., Gandomi **(2023)** "Application of metaheuristic algorithms in optimal design of sewer collection systems", *Comprehensive Metaheuristics Algorithms and Applications*, **Chapter 8.** Pages 153-161. **https://doi.org/10.1016/B978-0-323-91781-0.00008-9**

5. Jafari S., M., Bozorg-Haddad, B., **and Nikoo, M.R., (2022)** "Application of Artificial Neural Network and Fuzzy Logic in the Urban Water Distribution Networks Pipe Failure Modelling", *Computational Intelligence for Water and Environmental Sciences*, **Chapter 16.** Pages 333-354. **https://doi.org/10.1007/978-981-19-2519-1_16**

6. Zarei S., O., Bozorg-Haddad, B., **and Nikoo, M.R., (2022)** "The Basis of Artificial Neural Network (ANN): Structures, Algorithms and Functions", *Computational Intelligence for Water and Environmental Sciences*, **Chapter 11.** Pages 225-250. **https://doi.org/10.1007/978-981-19-2519-1_11**

7. Yaghoubzadeh-Bavandpour A., O., Bozorg-Haddad, B., Zolghadr-Asli **and Nikoo, M.R., (2022)** "Multi-Objective Optimization Application in Water and Environmental Sciences", *Computational Intelligence for Water and Environmental Sciences*, **Chapter 3.** Pages 63-83. **https://doi.org/10.1007/978-981-19-2519-1_3**

8. Dehghani M., **and Nikoo, M.R., (2018)** "Monitoring and Management of Land Subsidence Induced by Over-exploitation of Groundwater", *Natural Hazards GIS-Based Spatial Modeling Using Data Mining Techniques*, Springer Nature Switzerland AG, Pages 271-296. **https://doi.org/10.1007/978-3-319-73383-8_12**

Journal Publications

1. Khoshkonesh, A., Nazari, R., **M.R. Nikoo**, and M. Karimi **(2024)** "Enhancing Flood Risk Assessment in Urban Areas by Integrating Hydrodynamic Models and Machine Learning Techniques", *Science of the Total Environment*, **https://doi.org/10.1016/j.scitotenv.2024.175859**

2. Andaryan, N.J., Nadiri, A.A., **M.R., Nikoo**, Barzegar, R., Senapathi, V., and Towfiqul Islam, A.R.M. **(2024)** "Multi-Contamination Groundwater Risk Assessment based on Integrated OSPRC Framework Considering Receptor and Consequence Components", *Groundwater for Sustainable Development*, **https://doi.org/10.1016/j.gsd.2024.101321**

3. Zare, M.S., **M.R., Nikoo,** G., Al-Rawas, R., Nazari, M., Al-Wardy, T., Etri, A.H., Gandomi **(2024)** "Integrated Ensemble Learning Approach for Multi-Depth Water Quality Estimation in Reservoir

Environments", Journal of Water Process Engineering, **https://doi.org/10.1016/j.jwpe.2024.105840**

4. Zolghadr-Asli, B., M., Latifi, R., Beig Zali, **M.R., Nikoo**, R., Farmani, R., Nazari, A.H., Gandomi **(2024)** "Self-Tuning Multi-Layer Optimization Algorithm (STML): An Innovative Parameter-Less Approach", *Applied Soft Computing*, **https://doi.org/10.1016/j.asoc.2024.112045**

5. Shojaeezadeh, S.A., M., Al-Wadry, **Nikoo, M.R.,** M.G., Mooselu, N., Talebbeydokhti, N., Alamdari, and A.H., Gandomi **(2024)** "Historical Hazard Assessment of Climate and Land Use–Land Cover Effects on Soil Erosion Using Remote Sensing: Case Study of Oman", *Remote Sensing*, **https://doi.org/10.3390/rs16162976**

6. Heydari, S., **Nikoo, M.R.,** Mohammadi, A., and Barzegar, R. **(2024)** "Two-Stage Meta-Ensembling Machine Learning Model for Enhanced Water Quality Forecasting", *Journal of Hydrology*, **https://doi.org/10.1016/j.jhydrol.2024.131767**

7. Al-Rawas, G., **Nikoo, M.R.,** M., Al-Wadry, and T., Etri **(2024)** "A Critical Review of Emerging Technologies for Flash Flood Prediction: Examining Artificial Intelligence, Machine Learning, Internet of Things, Cloud Computing, and Robotics Techniques", *Water*, **https://doi.org/10.3390/w16142069**

8. **Nikoo, M.R.,** M.G., Zamani, M.M., Zadeh, G., Al-Rawas, M., Al-Wadry, and A.H., Gandomi **(2024)** "Mapping Reservoir Water Quality from Sentinel-2 Satellite Data Based on a New Approach of Weighted Averaging, the Application of Bayesian Maximum Entropy", *Scientific Report-Nature*, **https://doi.org/10.1038/s41598-024-66699-2**

9. Kordani, M., **M.R., Nikoo**, M., Fooladi, I., Ahmadianfar, R., Nazari and A.H., Gandomi **(2024)** "Improving Long-Term Flood Forecasting Accuracy Using Ensemble Deep Learning Models and Attention Mechanism: Application of BI-LSTM, E-LSTM, and E-LSTM-GRU", *Journal of Hydrologic Engineering* - ASCE, **Accepted.**

10. Bahrami, M., N., Talebbeydokhti; G., Rakhshandehroo, **M.R., Nikoo** and N., Alamdari **(2024)** "Integrated multi-source data assimilation and NSGA-II multi objective optimization framework for streamflow simulations", *Journal of Hydrologic Engineering* - ASCE, **Accepted.**

11. Nazeryzadeh, N., **M.R., Nikoo,** and S.H., Afzali **(2024)** "Long-Term Resilience in Wastewater Management: Optimizing Treated Wastewater Allocation with a Dynamic Multi-Agent Approach", *Journal of Environmental Management*, **https://doi.org/10.1016/j.jenvman.2024.121527**

12. Chalipa, Z., Hosseinzadeh, M., and **M.R. Nikoo (2024)** "Performance evaluation of a new sponge-based moving bed biofilm reactor for the removal of pharmaceutical pollutants from real wastewater", *Scientific Report-Nature*, **https://doi.org/10.1038/s41598-024-64442-5**

13. Hassani, M.R., Niksokhan, M.H., Mousavi Janbehsarayi, S.F., and **Nikoo, M.R., (2024)** "Integrated Nonurban-urban Flood Management Using Multi-Objective Optimization of LIDs and Detention Dams based on Game Theory Approach", *Journal of Cleaner Production*, **https://doi.org/10.1016/j.jclepro.2024.142737.**

14. Fooladi, M., **M.R., Nikoo,** R., Mirghafari, C., Madramootoo, G. Al-Rawas,, and R., Nazari **(2024)** "Robust Clustering-Based Hybrid Technique Enabling Reliable Reservoir Water Quality Prediction with Uncertainty Quantification and Spatial Analysis", *Journal of Environmental Management*, **https://doi.org/10.1016/j.jenvman.2024.121259**

15. Kaushal, A., Karimi, M. Nazari, R., Opare, K., Museru, M., and **M.R., Nikoo (2024)** "Environmental Exposure and Respiratory Health: Unraveling the Impact of Toxic Release Inventory Facilities on

COPD Prevalence", Journal of Environmental Pollution, **https://doi.org/10.1016/j.envpol.2024.124286**

16. Shadmani, A., **M.R., Nikoo,** Gandomi, A.H., and Chen, M. **(2024)** "An optimization approach for geometry design of multi-axis wave energy converter", *Energy*, **https://doi.org/10.1016/j.energy.2024.131714**

17. Barati, M.K., Soundharajan, B.S., and **M.R., Nikoo (2024)** "Simulation of climate-adaptation responses to rainfall variability on rainfed yield anomalies", *Environmental and Sustainability Indicators*, **https://doi.org/10.1016/j.indic.2024.100411**

18. Al-Amri, A., Z., Yavari, **M.R. Nikoo,** and M., Karimi **(2024)** "Microplastics Removal Efficiency and Risk Analysis of Wastewater Treatment Plants in Oman", *Chemosphere*, **https://doi.org/10.1016/j.chemosphere.2024.142206**

19. Shojaeezadeh, S.A., Al-Wardy, M., **Nikoo, M.R.,** Moodelu, M.G., Alizadeh, M.R., Adamowski, J.F., Moradkhani, H., Alamdari, N., and A.H., Gandomi **(2024)** "Soil Erosion in the United States. Present and Future (2020-2050)", *CATENA*, **https://doi.org/10.1016/j.catena.2024.108074**

20. Khorshidi, M.S., Izady, A., Al-Maktoumi, A., Chen, M., **M.R., Nikoo,** and A.H., Gandomi **(2024)** "Groundwater Model Diagnostic Calibration and Uncertainty Analysis using Information Theory", *Hydrological Sciences Journal*, **https://doi.org/10.1080/02626667.2024.2347974**

21. Shadmani, A., **M.R., Nikoo,** Gandomi, A.H., Chen, M., and Nazari, R. **(2024)** "Advancements in Optimizing Wave Energy Converter Geometry Utilizing Metaheuristic", *Renewable and Sustainable Energy Reviews*, **https://doi.org/10.1016/j.rser.2024.114398**

22. **Nikoo, M.R.,** Bahrami, N., Madani, K., Al-Rawas, G., Vanda, S., and Nazari, R. **(2024)** "A Robust Decision-Making Framework to Improve Reservoir Water Quality Using Optimized Selective Withdrawal Strategies", *Journal of Hydrology*, **https://doi.org/10.1016/j.jhydrol.2024.131153**

23. Zamani, M.G, **M.R., Nikoo,** G., Al-Rawas, R., Nazari, D. Rastad, and A.H., Gandomi **(2024)** "Hybrid WT-CNN-GRU-based model for the Estimation of Reservoir Water Quality Variables Considering Spatio-temporal Features", *Journal of Environmental Management*, **https://doi.org/10.1016/j.jenvman.2024.120756**

24. Majnooni S., Fooladi, M., **M.R. Nikoo,** G., Al-Rawas, A.T., Haghighi, R., Nazari, M., Al-Wardy, and A.H., Gandomi **(2024)** "Smarter Water Quality Monitoring in Reservoirs Using Interpretable Deep Learning Models and Feature Importance Analysis", *Journal of Water Process Engineering*, **https://doi.org/10.1016/j.jwpe.2024.105187**

25. Rahimi, I., Gandomi, A.H., **M.R. Nikoo,** M., Mousavi, and F., Chen **(2024)** "Efficient implicit constraint handling approaches for constrained optimization problems", *Scientific Data-Nature*, **https://doi.org/10.1038/s41598-024-54841-z**

26. Khajehali M., H.R., Safavi, **M.R. Nikoo,** and M., Fooladi **(2024)** "A fusion-based framework for daily flood forecasting in multiple-step-ahead and near-future climate change scenarios: A case study of the Kan River, Iran", *Natural Hazards*, **https://doi.org/10.1007/s11069-024-06528-x**

27. Amoatey, P., Al-Nadabi, A., Chen, M., **Nikoo, M.R.,** Al-Maktoumi, A., Al-Hinai, A., and Izady, A., **(2024)** "Transition to Sustainable Hydrogen Energy in Oman: Implication for Socio-Economic Transformation and Environmental Well-being", *Environment, Development and Sustainability*, Springer, **https://doi.org/10.1007/s10668-024-04657-8**

28. Shojaeezadeh, S.A., Al-Wardy, M., and **Nikoo, M.R. (2024)** "Suspended Sediment Load Modeling Using Hydro-Climate Variables and Machine Learning", *Journal of Hydrology*, **https://doi.org/10.1016/j.jhydrol.2024.130948**

29. Giglou A.N., R. Nazari, M. Karimi**,** M.L., Museru, K.N., Opare, and **M.R. Nikoo, (2023)** "Future Eco-Hydrological Dynamics: Urbanization and Climate Change Effects in a Changing Landscape: A Case Study of Birmingham's River Basin", *Journal of Cleaner Production*, **https://doi.org/10.1016/j.jclepro.2024.141320**

30. Khorshidi, M.S., Izady, A., **Nikoo, M.R.,** Al-Maktoumi, A., Chen, M., and Gandomi, A.H., **(2024)** "An Agent-based Framework for Transition from Traditional to Advanced Water Supply Systems in Arid Regions", *Water Resources Management*, **https://doi.org/10.1007/s11269-024-03787-y**

31. Chen, M., Dong, Y., **Nikoo, M.R.,** Al-Maktoumi, A., and Izady, A., **(2024)** "Geothermal Harvest from a CO2 Storage Reservoir: Coupled Impacts of Geological Channel Length and Horizontal Well Configuration", *Journal of Hydrology*, **https://doi.org/10.1016/j.jhydrol.2024.130885**

32. Mousavi Janbehsarayi, S.F., Hassani, M.R., Niksokhan, M.H., **Nikoo, M.R.,** Anboohi, M.S., **(2024)** "Multi-Agent Robust Decision-Making for Sustainable Stormwater Management", *Journal of Water Resources Planning and Management*, ASCE, **https://doi.org/10.1061/JWRMD5.WRENG-64**

33. Al-Hadhrami, A., Sana, A., Etri, T., Al-Mamun, A., **M.R., Nikoo** and Al-Rawas, G. **(2024)** "Modeling of Seawater Intrusion into Salalah Coastal Plain Aquifer, Sultanate of Oman", *Groundwater for Sustainable Development*, **https://doi.org/10.1016/j.gsd.2023.101076**

34. Yan, Z., Kamanmalek, S., Alamdari, N., and **M.R., Nikoo (2024)** "Comprehensive Insights into Harmful Algal Blooms: A Review of Chemical, Physical, Biological, and Climatological Influencers with Predictive Modeling Approaches", *Journal of Environmental Engineering*, ASCE, **https://doi.org/10.1061/JOEEDU.EEENG-7549**

35. Haghdoost, S., M.H., Niksokhan, M.G., Zamani and **M.R., Nikoo (2023)** "Optimal Waste Load Allocation in River Systems Based on a New Multi-Objective Cuckoo Optimization Algorithm", *Environmental Science and Pollution Research*, **https://doi.org/10.1007/s11356-023-31058-7**

36. **Nikoo, M.R.,** A., Izady, P.H., Bakhtiari, A., Al-Maktoumi, M., Chen, and A.H., Gandomi, **(2023)** "A water resources management simulation-optimization model: application of graph-based hypergame model in water supply conflicts resolution", *Group Decision and Negotiation*, **10.1007/s10726-023-09862-w**

37. Nadiri, A.A, Bordbar, M., **M.R., Nikoo,** L.S., Silabi, V., Senapathi, and Y., Xiao **(2023)** "Assessing vulnerability of coastal aquifer to seawater intrusion using Convolutional Neural Network", *Marine Pollution Bulletin*, **https://doi.org/10.1016/j.marpolbul.2023.115669**

38. Zamani, M.G., **M.R., Nikoo,** S., Jahanshahi, R., Barzegar, and A., Meydani **(2023)** "Forecasting Water Quality Variable Using Deep Learning and Weighted Averaging Ensemble Models", *Environmental Science and Pollution Research*, **https://doi.org/10.1007/s11356-023-30774-4**

39. Khorshidi, M.S., Izadi, A., Al-Maktoumi, A., Chen, M., **M.R., Nikoo** and A.H., Gandomi **(2023)** "Information Theoretic Summary Statistics for Diagnostic Calibration of the Groundwater Models using Approximate Bayesian Computation", *Environmental Earth Sciences*, **https://doi.org/10.1007/s12665-023-11264-9**

40. Shadmani, A., **M.R., Nikoo,** and A.H., Gandomi **(2023)** "Adaptive systematic optimization of a multi-axis ocean wave energy converter", *Renewable and Sustainable Energy Reviews*, **https://doi.org/10.1016/j.rser.2023.113920**

41. Sheikhi Y., S.M., Ashrafi, **M.R. Nikoo,** and A., Haghighi **(2023)** "Enhancing Daily Rainfall Prediction in Urban Areas: A Comparative Study of Hybrid Artificial Intelligence Models with Optimization Algorithms", *Applied Water Science* , **https://doi.org/10.1007/s13201-023-02036-8**

42. Dadras, M., F., Masoumi, S., Masoumzadeh, S., Najjar-Ghabel, **M.R., Nikoo** and S., Yazdani **(2023)** "Evaluating the impact of leakage in intermittent water supply networks considering justice index: a case study", *AQUA -Water Infrastructure, Ecosystems and Society*, **https://doi.org/10.2166/aqua.2023.140**

43. Mohammadi F., Z., Yavari, **M.R. Nikoo,** A., Al-Nuaimi, and H., Karimi **(2023)** "Machine Learning Model Optimization for Removal of Steroid Hormones from Wastewater", *Chemosphere*, **https://doi.org/10.1016/j.chemosphere.2023.140209**

44. Holloway, R., D., Ho, C., Delotavo, W.Y., Xie, I., Rahimi, **M.R., Nikoo** and A.H., Gandomi **(2023)** "Optimal Location Selection for a Distributed Hybrid Renewable Energy System in Rural Western Australia: A Data Mining Approach", *Energy Strategy Reviews*, **https://doi.org/10.1016/j.esr.2023.101205**

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12) Tavakoli, A., **M. R. Nikoo** and R. Kerachian, "Developing an Equitable Scheme for Water and Waste Load Allocation in Rivers using Game Theory: A Case Study", *Proceedings of The 8th National Conference on World Environment Day*, June 23, Tehran, Iran, 2014.

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14) Tavakoli, A., R. Kerachian, **M. R. Nikoo**, M. Soltani and S. Malakpour-Estelaki, "Water and Waste Load Allocation in Rivers: Application of Factorial Analysis", *Regional Conference of Young Scientists on Recent Trends in Physical & Biological Sciences*, March 7-8, Bangalore, India, 2014.

15) Tavakoli, A., **M. R. Nikoo** and R. Kerachian, "Developing a Stochastic Model for Short-term Water and Waste Load Allocation in River Systems: A Case Study", *Proceedings of 3rd International Conference on Environmental Planning and Management*, November 26, Tehran, Iran, 2013 (In Farsi).

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22) Beiglou, P. H. B., R. Kerachian, **M. R. Nikoo** and S. T. O. Naeeni, "A Multiple Pollutants Trading-Ratio System for River Water Quality Trading", *Proceedings of International Conference on Ecological, Environmental and Biological Sciences (ICEEBS'2012)*, January 7-8, Dubai, UAE, 2012.

23) **Nikoo, M. R.,** S. N. Bashi-Azghadi, R. Kerachian and A. Karimi, "Selecting Monitoring Wells in Groundwater Systems for Identifying an Unknown Pollution Source using ELECTRE-III Decision-Making Technique", *Proceedings of International Conference on Ecological, Environmental and Biological Sciences (ICEEBS'2012)*, January 7-8, Dubai, UAE, 2012.

24) **Nikoo, M., R.** Kerachian, P. H. B. Beiglou and S.M. Mesbah, "Simulating Trading Pollutant Discharge Permits in Rivers Using GMDH", *Proceedings of the Fifth Conference and Exhibition of Environmental Engineering*, November 21-22, Tehran, Iran, 2011 (in Farsi).

25) Beiglou, P. H. B., R. Kerachian, N. Mahjouri, **M. R. Nikoo** and S. T. O. Naeeni, "A Two-pollutant Model for River Water Quality Trading", *Proceedings of the Fifth Conference and Exhibition of Environmental Engineering*, November 21-22, Tehran, Iran, 2011 (in Farsi).

26) **Nikoo, M. R.,** S. N. Bashi-Azghadi, R. Kerachian and E. Shirangi, "Comparing the Efficiency of ELECTRE-III and Promethee in Locating Groundwater Monitoring Wells for Identifying an Unknown Pollution Source", *Proceedings of the Fifth Conference and Exhibition of Environmental Engineering*, November 21-22, Tehran, Iran, 2011 (in Farsi).

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28) **Nikoo, M. R.,** R. Kerachian and S. N. Bashi-Azghadi, "Real Time Pollution Discharge Permit Trading in Rivers: Application of Bayesian Networks, Support Vector Machines and Fuzzy Matrix Games", *Proceedings of the Forth Iranian Water Resources Management Conference*, May 3-4, Tehran, Iran, 2011 (in Farsi).

29) **Nikoo, M. R. and** R. Kerachian, "River Water Quality Management Using Fuzzy Bi-matrix Games and Probabilistic Support Vector Machines", *Proceedings of the Sixth National Congress on Civil Engineering*, April 26-27, Semnan, Iran, 2011 (in Farsi).

30) Farbod, A., R. Kerachian, **M. R. Nikoo,** and S. N. Bashi-Azghadi, "Water Quality Zoning Using FIS, PNNs and GIS: Case Study of The Jajrood River", *Proceedings of the Sixth National Congress on Civil Engineering*, April 26-27, Semnan, Iran, 2011 (in Farsi).

31) **Nikoo; M. R.,** R. Kerachian and M. H. Niksokhan, "Trading Pollution Discharge Permits in Rivers Using Fuzzy Bi-matrix Games", *Proceedings of 2nd International Conference on Environmental Science and Technology (ICEST 2011)*, IEEE, February 26-28, Singapore, 2011.

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Perspective on Water Resources and the Environment (IPWE 2011), EWRI of ASCE, January 4-6, Singapore, 2011.

33) **Nikoo, M.R.,** R. Kerachian, and S.M. Mesbah, "Evaluating the Effect of Water Trading in Agricultural Sector on Available Environmental Flow in Rivers", *Proceedings of the Forth Conference and Exhibition of Environmental Engineering,* October 23-25, Tehran, Iran, 2010 (in Farsi).

34) **Nikoo, M.R.,** and R. Kerachian, "Surface Water Quality Zoning using Support Vector Machines and Bayesian Networks", *Proceedings of the Forth Conference and Exhibition of Environmental Engineering,* October 23-25, Tehran, Iran, 2010 (in Farsi).

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36) **Nikoo, M.R.,** R. Kerachian, A. Abed-Elmdoust and M. H. Niksokhan, "Developing Real-time Operating Rules for Trading Discharge Permits in Rivers: Application of Bayesian Networks and Zero Sum Fuzzy Games", *Proceedings of the 8th International Congress on Civil Engineering,* May 11-13, Shiraz, Iran, 2009 (in Farsi).

37) **Nikoo, M. R.,** M. H. Niksokhan and R. Kerachian, "Trading Pollutant Discharge Permits in Rivers: Application of Cooperative Fuzzy Zero-sum Games", *Proceedings of Third Iranian Water Resources Management Conference*, October 14-16, Tabriz, Iran, 2008 (in Farsi).

38) Mesbah, S. M., **M. R. Nikoo,** and R. Kerachian, "Conflict Resolution in Trading Pollutant Discharge Permits in Rivers considering Fuzzy Utility Functions for Dischargers", *Proceedings of Third Iranian Water Resources Management Conference*, October 14-16, Tabriz, Iran, 2008 (in Farsi).

39) **Nikoo, M., R.** Kerachian, and S.M. Mesbah, "Real-time Water Quality Management in the Zarjub River System in Gilan Province, Iran", *Proceedings of the Second Conference and Exhibition of Environmental Engineering*, May 20-21, Tehran, Iran, 2008 (in Farsi).

40) Mesbah, S. M., R. Kerachian and **M. R. Nikoo,** "Developing Real Time Operating Rules for Trading Discharge Permits in Rivers: Application of Bayesian Networks", *Proceedings of the 2008 World Water and Environmental Resources Congress*, May 12-16, Hawaii, USA, 2008.

10. TEACHING RECORDS

Graduate courses:

1) Artificial Intelligence Systems in Water Resources Management (Intelligent simulation and optimization models application in water and environmental engineering (Including fuzzy set theory, soft computing models and optimization models-PhD course))
2) Water Resources Systems Planning and Management (PhD course)
3) Water Resources Quality Management (PhD course)
4) Intelligent Systems in Civil Engineering (Master course)
5) Water Resources Systems Analysis (Master course)
6) Water Quality Management and Control (Master course)

Undergraduate courses:

1) Water Resources Engineering
2) Engineering Hydrology
3) Systems Engineering

4) Engineering Economics

11. GRADUATE STUDENSTS SUPERVISED

Ph.D. Dissertations

1) Sedghamiz, A., "Developing an Agent-Based Model for Optimal Water Conjunctive Allocation Based on Virtual Water Trade in Rivers Basin: Application of Game Theory", (2014-2018-Supervisor).
2) Nafarzadegan, A., "Developing a stochastic optimization model for water allocation based on the virtual water concept using game theory and bankruptcy approaches", (2014-2018-Supervisor).
3) Ghazali, M., Optimum allocation of water and cropping pattern in river-resrvior systems with application of agent based and games theory models under droughts condition, (2014-2018-Advisor).
4) Malakpour-Estalaki, S., "Developing a Bargaining Model for Urban Runoff Quality Management under Uncertainties", (2012-2018-Advisor).
5) Soltani, M., "Water Quality Management in River Systems with Emphasis on Controlling Non-point Pollution Sources and Uncertainties", (2012-2017-Advisor).

A few of M.Sc. Theses

1) Mohammad Banan Mah, "Hydraulic multi-objective optimization of chute-flip bucket system in dams: A case study, Jareh dam", M.Sc. of Department of Civil and Environmental Engineering, Shiraz University, (2015-2018).
2) Saber Farhadi, "Groundwater resource management utilizing an agent-based approach: case studies: Daryan and Arsanjan aquifers", M.Sc. of Department of Civil and Environmental Engineering, Shiraz University, (2015-2016).
3) Ehsan Abolghasemi nejad shirazi, "Conflict resolution in water allocation in multi reservoir systems based on water trading and virtual water concepts: Application of social choice procedures and game theory", M.Sc. of Department of Civil and Environmental Engineering, Shiraz University, (2015-2016).
4) Yalda Norouzi gharagezloo, "Developing a Hybrid Fuzzy Multi-criteria Decision Making-DRASTIC model for Determination of Aquifer Vulnerability with respect to pollutants", M.Sc. of Department of Civil and Environmental Engineering, Shiraz University, (2014-2015).
5) Ilnaz Haghighat Esfahani, "Developing an Optimization Model for Water and Waste Load Allocation in Rivers Using a Bargaining Model, A Case Study: Kor River", M.Sc. of Department of Civil and Environmental Engineering, Shiraz University, (2013-2014).
6) Mohsen Omidvar, "Developing a Fuzzy Multi-objective Programming Model for Cropping Pattern Planning", M.Sc. of Department of Water Engineering, Shiraz University, (2013-2014).
7) Moammad Reza Alizadeh, "Developing a Stochastic Groundwater Allocation Model: Application of Game Theory", M.Sc. of Department of Civil and Environmental Engineering, Shiraz University, (2013-2014).
8) Mousa Arab, "Developing a Stochastic Optimization Model of Dams Ski-jump Buckets: A Case Study, Jareh Dam", M.Sc. of Department of Civil and Environmental Engineering, Shiraz University, (2013-2014).

9) Atefeh Pouya, "Developing a Water Quantity-Quality Allocation Model in River Basins: Application of Game Theory", M.Sc. of Department of Civil and Environmental Engineering, Shiraz University, (2012-2013- Advisor).

12. MEMBERSHIP IN PROFESSIONAL SOCIETIES

- American Society of Civil Engineers (ASCE)
- Iranian Federation of Elites

13. Software and Model Experiences

- **Programming Software:** MATLAB, FORTRAN.
- **Urban Runoff Water Quality Management Model:** SWMM
- **River and reservoir Water Quality Simulation Software:** QUAL2Kw, CE-QUAL-W2
- **Multi Criteria Decision Making Model and Software:** PROMETHEE and Fuzzy PROMETHEE model, TOPSIS model, AHP and Fuzzy AHP model, IDS[1] Software (evidential reasoning method)
- **Climate change modeling:** LARS-WG
- **GIS:** Geographic Information System Software
- **Statistical Software:** Minitab, Data analysis toolbox of Excel for Statistical works (Multiple Linear Regression, Random generation number and …)
- **Artificial Intelligent Models:** Artificial Neural Networks (ANNs: Including MLP, RBF, GRNN and PNN NNs), Support Vector Machines (SVMs including SVR and PSVM), M5P Decision Tree, Bayesian Networks (BN), K-Nearest Neighbor (KNN), Clustering.
- **Optimization Model and Software:** Genetic Algorithm (GA and NSGA-II), Particle Swarm Optimization (PSO) and Honey Bee Mating Optimization (HBMO), LINGO Software, Optimization toolbox (Solver) of Excel for simple optimization problems.
- **Water and Environmental Engineering Software:** MODFLOW, HEC-RAS, HEC-HMS, EPANET, SEEP-W.
- **Fuzzy Approach Soft computing Models:** Fuzzy Inference Systems, Fuzzy K-Nearest Neighbor (FKNN), Adaptive Neuro-Fuzzy Inference System (ANFIS), Fuzzy Clustering
- **General Software:** Microsoft Office (Excel, Word and PowerPoint)