Hossein Yousefi

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Date of the CV: **04/25/2025**

Research Interests:

- Hydrology: process-based hydrological modeling, statistics for hydrology, hydrological filed works.
- System Analysis: reservoir operation optimization, uncertainty and risk analysis, system optimization.
- Data-Driven Modeling: Big data handling, and cutting-edge methods particularly deep learning.
- Climate Change Impacts Assessment: investigating extreme events, bias correction and downscaling.
- Anthropogenic Activity Impacts Assessment: focusing on water quality, land-use change, droughts.

Educational Backgrounds:

- **Master of Science in Water Resources Engineering** (Sep 2017 – Jun 2020)

  Thesis Subject: **Multi-Objective optimization of reservoir water quality management considering land use and climate change impacts.**

  GPA: 3.88/4 (18.08/20, 90.4/100)
  Under Supervision of Dr. Ali Moridi and Dr. Jafar Yazdi
  Shahid Beheshti University, Tehran, Iran.
- **Bachelor of Science in Civil Engineering** (Feb 2013 – Mar 2017)

  GPA: 3.02/4 (15.48/20, 77.4/100)
  University of Zanjan, Zanjan, Iran.

International Publications:

1- **Yousefi, H.**, Ahani, A., Moridi, A. (2025). Climate Change Impacts on Sustainable Water Resource Management: A Focus on Drought Analysis. In Behzadian, K. Zolghadr-Asli, B & Ferdowsi, A. Planning and Management for Sustainable Water Resources and Infrastructure under Climate Change. Elsevier. (Accepted for publication)

2- **Yousefi, H.**, Ahani, A., Moridi, A., & Razavi, S. (2024). The future of droughts in Iran according to CMIP6 projections. Hydrological Sciences Journal, 1–20. (DOI link) This paper has been selected as the featured article in Volume 69, Issue 7 of the esteemed Hydrological Sciences Journal.

3- Behzadi, F., Javadi, S., **Yousefi, H**. et al. (2024). Projections of meteorological drought severity-duration variations based on CMIP6. *Scientific Reports* 14, 5027. (DOI link)

4- **Yousefi, H.**, Moridi, A. (2022). Multi-objective Optimization of Agricultural Planning Considering Climate Change Impacts: Minab Reservoir Upstream Watershed in Iran. *Journal of Irrigation and Drainage Engineering*. (DOI link)

5- Behzadi, F., **Yousefi, H.**, Javadi, S., et al. (2022). Meteorological Drought Duration–Severity and Climate Change Impact in Iran. *Theoretical and Applied Climatology*. (DOI link)

6- **Yousefi, H.**, Jamal Omidi, M., Moridi, A., Sarang, A. (2021). Groundwater monitoring network design using optimized DRASTIC method and capture zone analysis. *International Journal of Environmental Research*. (DOI link)

* In addition, nine papers in Persian (with English abstract) are available in my Research Gate account and I have two under review papers in Scientific Reports and Water Resources Management journals. Moreover, I reviewed 17 papers written in Persian (with English abstracts) for the Journal of Water and Irrigation Management, one of the A-grade journals in Iran and a paper in Water Resources Management journal.

Languages:

- English (Professional working proficiency) — I am going to take TOEFL exam within a month.
- Persian (Native)
- Azeri (Bilingual)
- Turkish (Elementary)

Skills:

Programming Skills:

- MATLAB (Advanced)
- R (Upper intermediate)
- Python (lower Intermediate)
- LINGO (Advanced)

Professional Skills:

- Statistical Analysis
- Big Data Analysis
- Uncertainty and Risk Analysis
- Hydrological Modeling
- Data-driven Modeling
- Satellite Based Products Analysis
- Reservoir Operation and Water Allocation
- Environmental Impacts Assessment (EIA)
- Metaheuristic and Classic Optimization

Technical Software and Models:

- SWAT and SWAT-CUP
- ArcGIS
- WEAP
- Familiar with the following tools and models: Delft3D, Google Earth Engine, HEC RAS, HEC HMS, QUAL2Kw, CEQUALW2, WhAEM2000, Sewer GEMS, Water GEMS, SAP2000, SAFE, ETABS, and AutoCAD.

Personal Skills:

- Responsibility & Flexibility
- Hardworking
- High Motivation
- Willingness to Learn
- Management Skills
- Detail Oriented
- Teamwork & Collaboration
- Crisis Management

Employment

- **Researcher at** The Center for Environmental Studies and Research (CESAR)**, Oman**. (Mar 2025 – Now)
- **Secretory of young professional forum in** IRCOLD**, Iran.** (Nov 2022 – Now)
- **Member of reservoir and basin management forum in** IRCOLD**, Iran.** (Nov 2023 – Now)
- **IWRM and water resources engineer in** Jamab Consulting Engineering Co.**, Iran.** (Dec 2021 – Aug 2023)
- **Teaching Assistant, Shahid Beheshti University, Iran** (Oct 2022 – Dec 2024)
  Courses: Integrated Water Resources Management (IWRM). **Supervisor:** Dr. Saeed Alimohammadi.
- **Teaching Assistant, Shahid Beheshti University, Iran.** (Oct 2020 – Dec 2024)
  Courses: Teaching hydrological modeling by aid of SWAT, reveling climate change impacts on water resources particularly extreme events such as droughts, Reservoir water allocation system design in term of Integrated Water Resources Management (IWRM), environmentally sustainable development, and data-driven modeling particularly deep learning algorithms. **Supervisor:** Dr. Ali Moridi.

Flagship projects:

- **Climate change, hydrology, and coastal hydrodynamic specialist** (Mar 2025 – Now)
  Duty: I am conducting research on the hydrological analysis of Oman's coastal zones, particularly in relation to climate change, within the project "Impacts of Climate Change on Coastal Areas and Shallow Marine Environments in the UAE and Oman: The Coastal Area of the Sea of Oman." The first set of results, focused on developing a comprehensive risk-based analysis of climate change impacts, is under review in Scientific Reports. The second part addresses mitigation methods for coastal erosion. Supervisor**:** Dr. Malik Al Wardy and Dr. Mohammad Reza Nikoo.
- **Climate change specialist** (Aug 2020 – Dec 2022)
  Duty: I did calculations and analysis related to bias correction and temporal and spatial downscaling in the project named **"**Assessing Iran's vulnerability due to climate change**"**. The results are published as some articles in national journals (in Persian language), and an international paper published in Theoretical and Applied Climatology journal. Another article with the same team is published in Nature's Scientific Reports. Supervisor**:** Dr. Saman Javadi.
- **Hydrological modelling and analysis specialist** (Mar 2017- May 2021)
  Duty: I did my job as hydrological modeler, and I simulate quality and quantity of flow using SWAT in order to participate in the project named **"**Environmental Management Plan and Monitoring Network Design for Preserved Rivers in Iran**"**. this project we had to simulate the watersheds of these rivers and then develop a suitable quality monitoring plan for quality and quantity of streams. Supervisor**:** Dr. Ali Bagheri.

Other projects and positions:

- Integrated water resources management of ZayandehRud river basin, Supervisor: Dr. Ali Moridi.
- Reveling water contaminant sources in Alborz, Iran. Supervisor: Dr. Ali Moridi.

- Preparation of environmental regulations for oil and gas exploration drilling, Supervisor: Dr. Alireza Vafaeinejad.
- Design 60-hectare forests of Rey Special Economic Zone (RSEZ), Supervisor: Dr. Ali Moridi.
- Hydrological and Hydrogeological study of 8 mines and process lines (including iron, copper, lead, zinc, gold, and silver) in Iran.
- Two EIA projects: (1) NIGC Central building, (2) Rey Special Economic Zone, Supervisor: Dr. Ali Moridi.
- Roadmap Development Studies for Improving Water Quality in the Mamloo Dam Reservoir, Supervisor: Dr. Ali Moridi.
- Research assistant: Groundwater Monitoring Network Design, Supervisor: Dr. Ali Moridi.
- Urban water quality monitoring instruction, Supervisor: Dr. Saman Javadi.
- Environmental management plan and risk assessment of Macan LNG factory in Kish, Iran (as project manager).
- Feasibility study for water transferring from Oman sea to Isfahan. Supervisor: Dr. Ali Moridi.

Lecturer:

- **Climate Change: How to downscale and do bias correction for CMIP6?** (Oct 2024 and Dec 2022, IRCOLD)
- **SWAT: How to setup a model considering hydrological aspects and uncertainties?** (Feb 2021, Online Conference, The 8th National Conference of Iran's Water Resources Management)
- **WEAP: How to use WEAP for water allocation?** (Nov 2019, Professional Training Center, SBU)
- **LINGO: How to use LINGO to optimize a water allocation system?** (Aug 2019, Ministry of energy)

Other Key Academic Merits:

- Introducing Practical and Research Applications of the SWAT Model in Identifying and Solving Quantitative and Qualitative Challenges of Water Resources (Link to post)
- Eutrophication of Domestic Reservoirs and Mitigation Measures (Link to post)

Awards and Honors:

- Our paper 'The future of droughts in Iran according to CMIP6 projections' has been selected to be the featured article in Volume 69, Issue 7 of Hydrological Sciences Journal.
- Member of National Elites Foundation
- Achieved the second-highest rank among my peers who entered in the same academic year.
- Attended high school at the National Organization for Development of Exceptional Talents (NODET) in Abhar, Iran.

M.Sc. Courses:

- Advanced Hydrology
- water resources systems analysis and management 1 and 2
- Soft Computing
- Advanced hydrogeology
- RS and GIS in Water Resources Engineering
- Water Resources Quality Management
- Environmental Impacts Assessment

References:

- **Ali Moridi** (Associate Professor)
  Faculty of Civil, Water and Environmental Engineering
  Shahid Beheshti University, Tehran, Iran.
  Email: a_moridi@sbu.ac.ir
  Field of cooperation: main supervisor of MSc
- **Jafar Yazdi** (Associate Professor)
  Faculty of Civil, Water and Environmental Engineering, Shahid Beheshti University, Tehran, Iran.
  Email: j_yazdi@sbu.ac.ir
  Field of cooperation: second supervisor of MSc
- **Saman Razavi** (Associate Professor)
  Institute for Water Futures and Mathematical Sciences Institute, Australian National University, Canberra, Australia.
  Email: saman.razavi@anu.edu.au
  Field of cooperation: The future of droughts in Iran according to CMIP6 projections.
- **Saman Javadi** (Associate Professor)
  Department of Water Engineering, College of Aburaihan University of Tehran, Tehran, Iran.
  Email: javadis@ut.ac.ir
  Field of cooperation: Projections of meteorological drought severity-duration variations based on CMIP6.