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Research Interests

- Heatwaves and extreme temperature analysis
- Prediction of heatwave with machine learning models
- Hydraulic engineering and environmental hydraulics
- Climate change impacts on water systems

Education

K. N. Toosi University of Technology (KNTU) - Master of science - water management, 2023
Azad University - Bachelor of science - Civil Engineering, 2020

Academic & Research Experience

Research Assistant SHENS Research Group, Iran 2023–Present

- Teaching Assistant, Fluid Mechanics, 2023 - 2025
- Conducting research on heatwaves (event definition, detection, and statistics)
- Collaborating on data collection, preprocessing, and analysis workflows

Technical & Research Experience

- Developed statistical modeling workflows for Iran-focused analyses
- Literature review and synthesis on heatwaves; drafted review articles
- Studied copula functions for multivariate extreme analysis
- Applied machine learning methods to environmental datasets

Conference Proceedings

- Mirzaei, M.E.: 'Heat Wave Assessment in Iran's Vulnerable Locations Incorporating Climate Change Scenarios', 2025. <https://doi.org/10.5194/egusphere-egu25-15165>

Experience job

- Hirad Reinforced Concrete Company
- Yuzhender Tower Construction Company

Projects

- Six-Story Steel Building Project — 2020
- Six-Story Concrete Building Project — 2020
- Climate Change Assessment under Future Scenarios — 2024
- Design of Ogee Spillway — 2023
- Design of Bottom Outlet — 2024
- Design of Drainage and Filter for Earth Dam — 2023
- Stability Analysis of Dams against Extreme Temperature and Climate Variations — 2024

- Hydraulic Performance Analysis of Standard and Modified USBR Type III Stilling Basin using Scale Modeling: Case Study of Mohammad Dam Spillway, Pakistan — 2024
- Flood Warning Systems in Rivers — 2024

COMPUTER SKILLS

Operating Systems

- Windows; Linux

General Software

- Microsoft Office (Word, PowerPoint, Excel, OneNote, MSP)

Specialized Software

- SolidWorks; QGIS; ArcGIS; MathType; FLOW-3D
- AutoCAD; AutoCAD Civil 3D; ETABS; GeoStudio

Programming

- Python (advanced); Fortran (intermediate); WordPress (intermediate); R (advanced); MATLAB (advanced)

LANGUAGES

- English — Intermediate proficiency