# Ali **Khajavian**

M.Sc. in Civil and Environmental Engineering

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## Education

**2020–2023**  **M.Sc., Environmental Engineering**

University of Tehran, Tehran, Iran
- **Thesis:** Development of an integrated algorithm for control strategies to improve the performance of urban wastewater treatment plants
- **Supervisor:** Dr. Sara Nazif
- **GPA:** 4 of 4 – 19.3 of 20

**2016–2020**  **B.Sc., Civil Engineering**

University of Tehran, Tehran, Iran
- **GPA:** 3.7 of 4 – 17.7 of 20

## Research Interests

- Water and Wastewater infrastructures
- Digital Water
- Artificial Intelligence (ML, DL)
- Control theory
- Dynamic modeling
- Smart City

## Publications

**2023**  **Khajavian, A.**, Pourmohamadi, A., Nazif, S., Khatibi, Y. (2023). Static Calibration of Wastewater Treatment Plant Models: Investigating Calibration Processes and Objective Functions. Journal of Water Process Engineering. https://doi.org/10.1016/j.jwpe.2023.104016

**2023**  Nazif, S., Pourmohamadi, A, **Khajavian, A.**, Khatibi, Y. (2023). Redevelopment of BSM1 model to model the wastewater treatment system of Carousel oxidation, case study: South Tehran wastewater treatment plant. Journal of Water and Wastewater Science and Engineering. https://doi.org/10.22112/jwwse.2023.379624.1343

**2022**  **Khajavian, A.**, Nazif, S. (2022). Challenges in WWTP modeling, following the GMP protocol, Case study: Carousel – Oxidation ditch system. 4th Iran Water & Wastewater Science & Engineering congress. https://civilica.com/doc/1630937

**2023**  Pourmohamadi, A., **Khajavian, A.**, Nazif, S. Enhancing WWTP performance under hydraulic and quality shocks using control strategies: Application of synthetic data. (Under Preparation)

## Specialized Software Skills

Programming: **MATLAB**, **Simulink**, **Python**, **Excel VBA**

Civil: **AutoCAD**, **GIS**, **WaterGEMS**, **SewerGEMS**

Others: **Photoshop**, **Adobe Premiere Pro**, **Microsoft Office**

## Language Test Score

**TOEFL iBT (March 05, 2022): 110**          [Reading: 30, Listening: 30 Speaking: 26 Writing: 24]

## Research and Academic experience

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|---|---|
| 2021–2023 | **Thesis**, WWTP modeling and control |
| | **Highlights:** 1. A real WWTP model was modeled in MATLAB Simulink 2. MPC, fuzzy and PID controllers were developed 3. Influent uncertainty effects were assessed |
| 2021–2023 | **Teaching Assistant**, "Water and Wastewater Treatment fundamentals" and "Advanced Water and Wastewater Treatment" courses, 3 semesters, University of Tehran |
| 2019–2020 | **Internship**, Research and development team |
| | **Highlights:** 1. Modeling multiple cities water distribution system 2. Fault detection project 3. Designing wastewater treatment plants |

## Honors and Rewards

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|---|---|
| 2022 | Ranked 1st among M.S. Environmental Engineering Students |
| 2022 | Ranked 2nd in "Teaching assistants' innovation" competition, 7th Iranian conference on Engineering Education |
| 2020 | Ranked 8th among 103 B.S. Civil Engineering students (Class of 2016) |
| 2016 | Ranked in the top 0.6% among more than 150,000 participants in Iranian University Entrance Exam and was awarded a full national scholarship |

## Selected specialized courses

(1)      **"Risk Assessment"**, Dr. Masoud Tabesh

(2)      **"Uncertainty Analysis"**, Dr. Mohsen Nasseri

(3) **"Water Quality Management"**, Dr. Reza Kerachian

(4) **"Advanced Water and Wastewater Engineering"**, Dr. Masoud Tabesh

(5) **"Sustainable development and environmental management"**, Dr. Reza Kerachian

(6) **"Advanced water and wastewater treatment"**, Dr. Sara Nazif