

Advanced Machine Learning Methods for Enhanced Wastewater Treatment

The One Water Solutions Institute (OWSI) at CSU is seeking a motivated PhD graduate research assistant to join an intellectually exciting and socially impactful sponsored research project. The overall goal of this study is to advance machine learning (ML) techniques to understand, analyze, and predict wastewater treatment process and fluxes at the unit processes to facility scales. The study will develop a software that enables characterization of temporal trends in wastewater contaminant fluxes; short-term forecasting of wastewater process changes in contaminant removal rates based on operational and environmental conditions; quantification of risk of failure and reliability under varying operational and environmental conditions; and decision support for the assessment of the water quality effects of management and technological control strategies.

Required qualifications are:

- MS in Civil and Environmental Engineering or related discipline.
- Clear research interest in wastewater treatment processes and decision sciences.
- Proficiency in oral and written English communication.

Preferred qualifications for this position are:

- Experience with coding in R, Python, Matlab, or other programming languages.
- Experience with statistical methods, data sciences, and ML techniques.
- Research experience in environmental and/or water resources engineering.
- Demonstrated ability to work effectively in teams.
- Demonstrated ability to write and publish original research.

If interested, contact **Prof. Mazdak Arabi**

(madak.arabi@colostate.edu) with the following materials as a single PDF attachment and email subject line “Application for PhD Position – Advanced Machine Learning Methods for Enhanced Wastewater Treatment”:

- 1) A 1–2–page cover letter with your interest in the position and research topics, and how you meet the required and preferred qualifications, and
- 2) A current resume or CV.