

Enhancing characterization of trends in large floods and flood forecasting

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 Flood Potential Portal, developed by the U.S. Forest Service and OWSI, enhances the understanding of flood variability and quantifies design flood discharges and flood frequency relationships. The software assists practitioners with assessments to support infrastructure decisions, including designing road-stream crossings. This project develops and implements advanced ensemble machine learning to improve forecasting of temporal trends in large floods due to changes in the underlying climatic, physiographic, and ecohydrologic conditions.

Required qualifications are:

- MS in Civil and Environmental Engineering or related discipline.
- Clear research interest in statistical hydrology, data sciences, and modeling.
- Proficiency in oral and written English communication.

Preferred qualifications for this position are:

- Experience with coding in Python, R, Matlab, or other programming languages.
- Experience with statistical and probability methods for flood frequency analysis.
- Experience with geographic information systems (GIS) such as ESRI's ArcGIS Pro.
- Research experience in water resources science or 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 – Enhancing characterization of trends in large floods and flood forecasting":

- 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.