Ph.D. Opportunities – Geotechnical Engineering

Washington State University

The research group of Dr. Zhijie Wang in the Department of Civil and Environmental Engineering (CEE) at Washington State University (WSU) is seeking 2 highly motivated Ph.D. students to begin in Fall 2025 or Spring 2026. The students will conduct cutting-edge research in geotechnical engineering, focused on digital twins (DT) of infrastructure systems. Research topics include:

1. ***Position 1:*** Numerical modeling for resilient geotechnical flood protection infrastructure
2. ***Position 2:*** Experimental investigation of short- and long-term wildfire-induced geohazards

About the PI:

Dr. Wang will join WSU as a tenure-track Assistant Professor in August 2025. He holds a Ph.D. from the University of Michigan, and M.S./B.S. degrees from Zhejiang University, all in Civil Engineering. He completed postdoctoral training at the University of Pittsburgh, after spending five years with Country Garden, a Fortune Global 500 company, where he held senior leadership roles managing property development, land acquisition, and R&D in construction automation and infrastructure informatics. His unique blend of academic and industry expertise enables him to effectively advise students navigating career aspirations in both academia and industry.

Dr. Wang's research is focused on advancing the understanding of geomaterial behavior and applying these insights to real-world challenges, including enhancing flood resilience, mitigating geohazards, supporting renewable energy infrastructure, and facilitating subsurface carbon sequestration. To achieve these goals, his research leverages advanced experimental methods, sensing and data acquisition, computational geotechnics, multiscale modeling, AI, and data science. By integrating these research tools, the ultimate goal is to create adaptive DTs that can issue advanced decision-making support to enhance infrastructure resilience. Dr. Wang's research has been published in several prestigious geotechnical journals, including *Géotechnique* and *Computers and Geotechnics*, and has secured several coveted NSF awards.

Preferred Qualifications:

- Academic background in Civil or Geotechnical Engineering or closely related disciplines
- Demonstrated research experience in:
    - *Position 1*: Soil mechanics, numerical modeling, and machine learning
    - *Position 2*: Soil mechanics, experimental methods, sensing technologies, and data analytics
- Strong foundation in mathematics and mechanics
- Proficiency in MATLAB, Python, and/or Julia
- Excellent written and oral communication skills in English
- A Master's degree is preferred but not required
- Preference will be given to U.S.-based applicants

What We Offer:

- Full financial support (tuition, stipend, benefits)
- Access to advanced labs and HPC resources
- Interdisciplinary collaborations and professional development opportunities

About WSU and CEE Department:

WSU, a public R1 research university, is the second largest in Washington state, with its main campus in Pullman. Located in the economically developed state of Washington, home to global industry leaders such as Microsoft, Amazon, and Boeing, the university provides students with abundant career opportunities. The CEE Department is nationally recognized for excellence in both research and education. (https://ce.wsu.edu)

To Apply:

Email Dr. Zhijie Wang at zjwang@umich.edu with the subject line: *Ph.D. Application – [Your Last Name]*. Include:

1. Brief statement of research interests and career goals
2. CV with GPAs, TOEFL/IELTS, and GRE (if applicable)