



CIVIL & ENVIRONMENTAL ENGINEERING

Funded PhD Opportunities

Our Infrastructure Sensing & Experimental Mechanics Laboratory (iSEM) at the University of Utah, Salt Lake City, UT, currently has two openings for Ph.D. students with full financial support, which are anticipated to start in Fall 2025. Successful candidates will be hired as Graduate Research Assistants (GRAs) in iSEM lab, working on research projects of developing and prototyping nonlinear ultrasound-based nondestructive evaluation (NDE) techniques, metamaterials for vibration mitigation, flexible ultrasound transducer design, quality assurance for additive manufacturing, and through-barrier acoustic/ultrasound transmission and imaging.

The iSEM lab is dedicated to ensuring and improving infrastructure integrity and resilience through innovative experimental mechanics techniques, metamaterial designs, and cyber-physical systems. We are interested in addressing research problems, including (i) fundamental understanding of non-propagating waves in elastic waveguides and architected materials for super-resolution imaging and material characterization; (ii) through-barrier power transmission, imaging, and data communication for geothermal well monitoring and power plant management; and (iii) metamaterial-enabled structural vibration mitigation strategies for high-rise buildings and off-shore wind turbines, to promote security and resilience of civil and energy infrastructure.

Successful candidates will have a strong background in at least one of the following areas: vibration, wave propagation, statistical modeling, machine learning, inverse problem, and optimization. The candidates shall also feel comfortable implementing algorithms, data acquisition, and processing in MATLAB, Python, and LabVIEW. Knowledge of ABAQUS, ANSYS, or COMSOL is an asset. An earned Master degree in civil or mechanical engineering is preferred but not required. International applicants must submit proof of English Language Proficiency.

Details can be found here: <https://admissions.utah.edu/apply/international/english-proficiency/>.

Interested applicants should send their CV, transcripts, and representative publications to Dr. Xuan Zhu at xuan.peter.zhu@utah.edu. Applications will be reviewed immediately, and successful candidates will then be invited to apply for admission by February 1st. For general information, please refer to <https://www.civil.utah.edu/graduate-admissions/>.