Job Description

Computer Vision for Smart Structure Laboratory (CVISS) at the University of Waterloo, led by Dr. Chul Min Yeum, invites applications for graduate studies (Direct Ph.D., Ph.D., Postdoc) in Civil and Environmental Engineering. Graduate students will engage in research driven by practical applications, harnessing state-of-the-art technologies to infuse intelligence into the physical built environment. This endeavor aims to enhance the safety and resilience of infrastructure, ensuring its ability to withstand and adapt to challenges. A primary research goal for these positions is evaluating the quality and safety of various infrastructure (e.g., reinforced concrete or steel structures) utilizing Non-destructive Testing (NDT). Students will collaborate with a multidisciplinary team of engineers and researchers to deliver cutting-edge solutions that drive innovation in our field. Students who have experience or knowledge of NDT are encouraged to apply for this position.

Qualification

Requirements

- An undergraduate, MASc, or Ph.D. degree in Civil Engineering, Mechanical Engineering, Electrical Engineering or equivalent.
- Expertise in working with signal/imaging processing, including but not limited to AI/ML libraries.
- Extensive experience in NDT methods including visual inspection, ultrasonic wave, and electromagnetic wave.
- Excellent proficiency in software or tools, such as Python, Matlab, LabView, or similar.
- Proficiency in English, both spoken and written, to communicate daily.

Preferred Qualifications

- Experience in operating and manipulating NDT sensors or equipment (e.g., ultrasonic transducers, laser vibrometer, fiber optics, infrared sensor, electromagnetic wave antenna).
- Experience with numerical simulation of solid mechanics or elastic waves using commercial software (e.g., Comsol, Abaqus, Ansys, or similar).
- Knowledge of construction materials and structural behavior
- Track record of publications in the areas of NDT and structural health monitoring.
- Experience at processing and analyzing electrical schematics and engineering drawings.

Duties and responsibilities

- Coordinating research projects and delivering outputs.
- Disseminating results through scientific publications and conference presentations.
- Communicating and working with industries and stakeholders in government.
- Participating in research proposal drafting and project deliverables.
- Assisting in the organization of relevant workshops and demos.

Application

All qualified individuals are encouraged to apply for this position. The candidates should send a detailed CV to Dr. Yeum (**cmyeum@uwaterloo.ca**) with the email subject "Position Application". Before applying to the position, please review the current research in our lab (**https://cviss.net**). Dr. Yeum may ask for additional information from the candidates.

Dr. Yeum will review the applications and contact candidates who meet the criteria to arrange interviews. If you do not hear from us, it means your application did not progress to the interview stage. Selected candidates will have the opportunity to start the program in Spring 2026 or Fall 2026.

If you are passionate about applying the newest computer vision technologies to solve impactful civil engineering problems and want the opportunity to collaborate with leading industry partners, apply to our lab today!

UNIVERSITY OF WATERLOO
FACULTY OF ENGINEERING