Le génie pour l'industrie

Lab INIT Robots

Ultra-slow robotic larva design

Job description

The INIT Robots lab is seeking a master student (at least 12 credits' project) to design a robotic larva (elongated mobile robot) moving at the speed of tectonic plates (few centimeters per year) in order to create an artistic and pedagogical representation of the tectonic plates motion.

This project involves the collaboration of several partners, namely the NXI Gestatio Design lab directed by Pr. Nicolas Reeves at UQAM and the Pr. Alain Hénault at ÉTS. You will work closely with the experts from these groups.

Responsibilities

The successful candidate will carry out the responsibilities of this position with dynamism and creativity, namely

- You will have to review the design of all the parts of the mechanical and optical concept and adapt, if needed, for manufacturing;
- You will be in charge of the manufacturing and the assembly of the ultra-high ratio transmission mechanism as well as to conduct tests on the accuracy of the output ultra-low velocity;
- You will be in charge of the assembly of the interferometer on the larva used to visualise the slow motion;
- You will conduct extensive tests on the whole system in order to minimise vibration on the interferometer and optimise the visualisation and accuracy of the motion;
- You will work alongside a team of several MScs and PhDs and several engineering interns with whom you are invited to share issues and provide support.

Resources

We have one of the largest manufacturing facilities in all Canadian universities and a technical team to support you with manufacturing processes and the assembly.

Duration

Start date is as soon as possible. The project will most likely spread over a minimum of eight (8) months.

Salary and benefits

A scholarship of 5 000$ to 10 000$ per semester on the project can be provided based on the quality of the candidate. This includes:

- Flexible workweek schedule adaptable to the applicant cursus;
- The work mode is hybrid, meaning that you can work remotely at times. You will have to be in the lab to experiment with the hardware.

Profile and Job Requirements

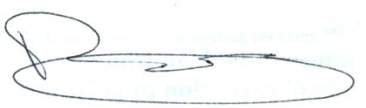
- You are registered (or planning to) in a master's program of the mechanical engineering department of ÉTS;
- You have strong knowledge of mechatronics;
- You have strong knowledge of vibration and/or optics;
- Having experience in robotics is an asset.

Application Instructions

Candidates are invited to submit an application file that includes:

- A CV
- Your most recent academic transcript.

To apply: https://initrobots.ca/en/positions



Dr. David St-Onge, Eng. PhD MPM
Associate professor
Director of INIT Robots Lab
Department of Mechanical Engineering
École de technologie supérieure
david.st-onge@etsmtl.ca