Software development internship

The aim of this project is to coordinate and contribute to the academic software platform used by the Energy Systems and Sustainable Cities research group at the University of Victoria. The platform is a disparate set of bespoke scripts and established software programs which currently lacks structure and is missing several key functionalities.

Tasks and Responsibilities
The core tasks of this project all contribute to making this a more effective resource for the group to use in research projects:

- Establishment of a version management environment and associated usage instructions.
- Deployment on a High-Performance Computing platform via Compute Canada.
- Collation and alignment of existing internally-developed software, including formatting and documentation standards.
- Set-up and alignment of existing and new external software resources.
- Continuing the development of the modular energy modelling framework that sits at the core of the software platform.

More advanced tasks that will be included as stretch goals for advanced students are:

- Development of new simulation approaches to exploit new application areas. An example would be the integration of the Google-developed TensorFlow machine learning library.
- Engineering of software solutions to meet specific research challenges.
- Publication of advanced work is encouraged.

Work Plan
The project will run for 16 weeks (May – August 2017) at 40 hours per week. The work will be structured into phases as follows: (1) initial learning and exploration, (2) platform set-up, (3) code development, (4) application and testing, (5) write-up and documentation.

There will be weekly meetings (or more frequently if necessary) to assess progress, provide feedback, reassign priorities and address issues arising from the work.

There is possibility of flexible working hours and remote working for suitable candidates.

Requirements
Applicants should have a strong background in computer science, engineering or software development. Abilities in Python are essential, and ideally also MatLab. Familiarity with topics including building energy simulation, mixed-integer linear programming and multi-objective optimisation are a bonus.

The University of Victoria is an equity employer and encourages applications from persons with disabilities, visible minorities, Aboriginal Peoples, people of all sexual orientations and genders, and others who may contribute to the further diversification of the University.