PhD position available in visualization of multi-dimensional building data

Designing high-performance, low-energy, comfortable, cost-effective, robust and climate resilient buildings requires a new generation of computational tools to effectively address these challenges. These tools will blend aspects of physics-based building energy simulation, black-box optimization, machine learning and design space visualization. This project will develop advances in all these areas, which will be combined into an online platform to be used by practitioners in industry and policy-makers in government to deliver better building designs that meet stringent new targets in British Columbia.

This position focusses on developing effective data visualization approaches that are needed to derive benefit from simulations and optimizations of building energy use. Building data is highly multi-dimensional, and design optimization adds another level of complexity to this, requiring tools that aid users in interactively exploring the data. This project will research the usability of interactive visual exploration tools, including analysis of the unique data collected on how the developed tools are used in practice.

The position will be supervised by Dr Ralph Evins (previously of Imperial College London and ETH Zurich) in his Energy Systems and Sustainable Cities research group together with Dr Charles Perin, expert in data visualization. The work will be carried out in the stimulating multi-disciplinary environment of the Institute for Integrated Energy Systems (IESVic) and the new green Civil Engineering department at the University of Victoria on Vancouver Island in beautiful British Columbia, Canada.

Desirable skills include building simulation, visualization design, data analysis and qualitative and quantitative evaluation methods, including survey design. Good working knowledge of Python is highly desirable (for an exceptional candidate an expert level in another programming language could be acceptable). Experience in designing and developing web-based visualizations is an asset. Mastering the English language is required.

Start dates between January and September 2019 are available. Positions are funded at a level comparable with NSERC Doctoral scholarships. Holders of such fellowships are eligible for significant top-up funding.

How to apply
Email iesvic.admin@uvic.ca with subject Evins NetZero Visualization, attaching the following:
- a 1 page cover letter explaining your fit for the position and describing programming expertise and previous research experience, and stating your preferred start date.
- a detailed curriculum vitae, including grades and English test score if applicable
- names and contact information for at least two professional or academic references.

Review of applicants will begin in November, but applications are welcomed until this advert is removed from here. If you have recently applied for a position, do not reapply.

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.