Advancing the CANWET watershed model and decision support system by utilizing high performance parallel computing functionality

University of Guelph– Post-doctoral Fellow

_____

Position Title: SOSCIP TalentEdge Post-doctoral Fellowship

Department: School of Engineering, University of Guelph

Remuneration: $57,500 / year

Posting Date: 23 January 2018

Duration: 1 year with the possibility of extension

Expected Starting Date: Immediately

Suggested deadline for application: February 15, 2018. The position will remain open until filled.

Supervisor: Dr. Prasad Daggupati and Mr. Trevor Boston

Location: University of Guelph

_____

Job Summary:

A dynamic, innovative, and highly motivated researcher is needed to develop/re-program a watershed modeling and decision support system known as CANWET. The post-doctoral fellow will transition the current desktop-based system to a web-based tool using cloud analytics platforms. The re-programing will take advantage of high performance computing by porting existing code to a higher performing language and restructuring to operate using parallel or multi-core processing. In addition, optimization algorithms for auto-calibration need to be added. The resulting web-based system will be applied in watersheds contributing to Lake Erie and will help in making decisions that support Government commitments of reducing 40% phosphorus contributions by 2025.

The candidate will be located at the School of Engineering at University of Guelph and will have an opportunity to mentor graduate students, work closely with the lead academic researchers and members of the industry partner to identify and implement a software architecture that achieves objectives of the project. The candidate will also be part of multiple federal, state and local projects and will present scientific results at professional meetings and publish in reputed journals.

https://www.soscip.org/

Required Qualification:

Ph.D in Computer Science, Agricultural or Civil Engineering, Hydrology, Geography or related fields with knowledge of watershed science and modeling. The candidate should have extensive experience in programming / scripting languages, data management, geo-processing and be familiar with development of applications using parallel computing frameworks in a Cloud environment.

It is anticipated that the project will incorporate elements of big data, machine learning, geo-processing and statistical analysis and will use a variety of tools and frameworks. Expertise in porting software between development environments, from desktop applications to cloud environments incorporating mapping, charting, statistical aspects is needed. Support will be available to work with the successful candidate to address some of these requirements.

Experience in applications involving use of machine learning or similar approaches to converge on optimal solutions is desired. The candidate should be familiar with the application of statistical analysis on environmental data and understand watershed processes. Excellent oral and written communication skills are needed, and the candidate should be able to work independently/collaboratively and communicate results to wide variety of audience.

How to Apply:

Please send a curriculum vitae, academic transcripts, statement of research interests as email attachments to Dr. Prasad Daggupati at pdaggupa@uoguelph.ca and a copy to Trevor Boston at tboston@grnland.com.

https://www.soscip.org/