Mount Allison UNIVERSITY

Department of Mathematics and Computer Science

Employment Position Description

Senior Research Technician – Computer Programmer

General nature of this position

This is a senior level professional and technical work position in a scientific research support capacity. The work involves major responsibility on various aspects of research projects led by the Principal Investigator (PI), Dr. Peter Lelièvre. The position requires familiarity with a wide range of work situations and techniques common to the particular field of research (described below). The work may involve supervision of other professional and technical employees. The work is performed with considerable technical independence and is reviewed and evaluated principally by observation of results obtained. The employee must possess specific advanced knowledge (listed below) and be capable of exercising considerable independent judgement as they may be the only representative of a certain technical specialty on a research team.

Responsibilities

A Senior Research Technician (SRT) is sought to perform the following specific duties:

- Write, reimagine, reorganize, improve and maintain software currently used for collaboration between several academic and industry organizations. The software in question supports researchers in their continued development of geophysical numerical modelling and inversion methods as part of the NSERC-funded project "Numerical Solution of Next Generation Inverse Problems for Geophysical Applications".
- Contribute to the writing and submission of academic papers in geophysical or software journals.
- Present talks at conferences to describe the software improvements.
- Collaborate with researchers connected to this specific project at Mount Allison University and Memorial University, with other university collaborators at several world-wide universities, and with employees at any industry companies licensed to use the software.

Qualifications

The ideal candidate will have the following qualifications. However, any interested candidates are encouraged to apply.

- An M.Sc. degree in computer science or a related discipline, but applicants with other relevant backgrounds and experience will be considered.
- A background in geophysics or a related scientific discipline would be an asset but is not required.
- A solid background in modern software design principles.
- A working knowledge of the principles of object-oriented programming, high-performance computing, and code version control systems.
- Expertise and experience developing software to implement scientific modelling or data analysis methods.
- Experience working with a team on software development projects.

- Experience with Fortran, C, Python and Java language variants will be valuable (with preference in that order).
- Experience writing object-oriented code in modern Fortran language standards, or in some high-power, compiled programming language.
- The ability to evaluate and analyze existing techniques and procedures, and to develop new techniques and procedures, as applied to software development.
- The ability to establish and maintain effective working relationships with faculty and research personnel.
- Experience planning and directing the work of professional and technical research personnel.
- The ability to observe, analyze and objectively report the results of research experimentation.
- The ability to understand and follow complex oral and written instructions.
- The ability to self-motivate, and be capable of independent thought and work.

Location, Term, Renumeration and Application Instructions

Ideally the SRT will complete the job responsibilities while located at Mount Allison University in Sackville, NB, Canada. The SRT could also be located with the PI's collaborators at Memorial University in St. John's, NL, or at the University of British Columbia in Vancouver, BC. Remote work from those or other locations may be feasible but will require vetting through the PI and the funding agencies.

This is a twelve month position. This position will be funded by an NSERC Discovery grant entitled "Numerical Solution of Next Generation Inverse Problems for Geophysical Applications" and by an NBIF Research Professionals Initiative grant entitled "Object-Oriented Programming Design for Multimodal Geophysical Inversion". Funding is available for start dates as early as June 1, 2022, but the start date can be delayed if needed. The position will be filled as soon as a suitable candidate is found. Yearly salary is expected to be in the range of $35,000 to $50,000, commensurate with qualifications and experience.

To apply, please send the following to Dr. Peter Lelièvre at plelievre@mta.ca:

- cover letter
- curriculum vitae
- link to GitHub or other repository with code examples
- contact information for two referees (reference letters are not required).