Data processing specialist for SNO+

The SNO+ collaboration, an international particle physics experiment located in Canada, is looking for a computer scientist to manage, operate, maintain and develop the data processing chains of the experiment.

The experiment runs continuously and acquires about 500 TB of physics data per year. Besides that, simulating the experiment behavior produces some additional 200 TB of data per year. Data need to be stored in multiple sites across the world, processed using automated tools that make its interpretation possible, and the location and status of files need to be registered in a reliable database. The main responsibility of a successful candidate is to run these tasks continuously.

The specific duties and responsibilities include:
- Operate the data processing chain by developing and updating software tools to monitor the performance of systems, keep compatibility across resources, and maintain the software clients used in the processing chain;
- Maintain the database used for data files of SNO+ and monitor data transfer to/from multiple sites;
- Document computer code, database updates, and operating procedures;
- Report progress to relevant parties.

The following capabilities are an asset:
- Adapting to new codes
- Excellent in learning new tasks
- Skills in Monte Carlo techniques
- Interest in Physics

Qualifications:
- Finished BSc in Computer Science or equivalent, or a senior student of the same degree. Degrees in other disciplines (e.g. Physics, Math) will also be considered as long as the candidate fulfills all of the requirements listed below.
- Demonstrated proficiency in Python programming.
- Demonstrated proficiency with the Linux operating system.
- Familiarity with use and understanding of distributed computing and batch systems.
- Experience with document databases, database management and validation.
- Some experience in website development
- Must be self-motivated and reliable with ability to take initiative, multi-task and work independently with minimal supervision
- Excellent team working skills
- Excellent communication (verbal and written), interpersonal, organizational, problem solving and time management skills.
- Optional: Interest and/or experience in management of a high performance computing cluster.

When applying for this position:
- Provide examples of how you fulfill the qualifications required, such as projects carried out in school where python was used extensively, or databases were required.
- Be precise on the level of expertise you have for each requirement.

- To ensure you have carefully read this ad, please include the following line under your name in your CV: "Neutrinoless double beta decay experiment"

About the position:
- The position can be half-time, dedicated to the tasks listed above, or full-time, with similar responsibilities for another physics experiment. Please state clearly if you are interested in a full-time or half-time position.
- Graduates and senior CS and science students with relevant experience are welcome to apply.
- The position can be hosted by the research groups at Queen's University (in Kingston, ON), the University of Alberta (Edmonton, AB) or SNOLAB (Sudbury, ON). It is also possible to work entirely remotely. Please state your preference in your application. It could be beneficial to spend at least some time on site (SNOLAB).
- A successful candidate will be offered a one-year contract with the possibility of renewal, depending on funding.
- The full-time salary range is from $30,000 to $58,000 CAD per year, based on qualifications and experience.

To apply, please provide:
- Up to date curriculum vitae,
- a statement of purpose highlighting your relevant qualifications for the position,
- the name and contact information of at least 2 references (either academic or previous employers).

Materials should be sent over email to Prof. Mark Chen (mchen@queensu.ca) by December 3rd, 2021.