

System Administrator / High Performance Computing Job Opportunity

Environment and Climate Change Canada (ECCC) has a small research group located on the Carleton University campus in the National Wildlife Research Centre. Within the research centre a geomatics research and development group has been assembled focusing their work on supporting ECCC's mandate around environmental conservation through landscape monitoring and mapping. This involves two large components – 1) collecting and analyzing geospatial datasets (vector and raster data that characterizes the environment) and 2) processing and analyzing earth observation data.

The geomatics lab is composed of approximately 20 researchers and technicians working on a local network. We are currently seeking a motivated individual who is interested in joining the lab to provide day to day IT support to ensure operational aspects of the lab are maintained. This includes:

Daily Operations:

- Manage Windows 10 workstations in a full AD environment (Server 2016)
- Manage Linux servers and reverse proxies (site hosting, VPN access, virtualization, sFTP ...)
- Manage lab network, storage + proper backup scheduling and maintenance
- Manage centralized Anti-virus and Anti-malware solutions
- Plan, build and maintain high-end workstations (server grade)

Further, as researchers in the lab currently utilize large datasets of earth observation data, for the most part provided by satellite sensors, but as well from airborne acquisitions and unmanned aerial vehicles (ie. Drones) for mapping and monitoring the earth's surface. This can involve processing thousands of satellite images using classification algorithms such as neural networks or random forest decision trees, as well as looking at statistical trend analysis through space and time. We are looking for someone who has experience or is interested in working in the high performance computing and software development environment as we are transitioning into this model in collaboration with Carleton University. The following outlines various aspects that we would be looking for in a candidate:

Research / Development:

- High Performance Computing (HPC) design and build
- Assist in software development and software migration for parallel implementation in HPC environments.
- Assist in the design and development of software for GPU and multi-GPU applications.
- Setup and evaluate geospatial big data storage and access solutions such as the OpenDataCube and Hadoop.
- Oversee the loading of large data volumes to HPC storage based on given specifications and associated maintenance.
- Programming knowledge of C++, Python, Linux scripting, Matlab is desired.

There is an opportunity to work part-time through a Federal Government Research Affiliate Program (RAP), or perhaps a coop placement, with long-term employment a possibility if the right candidate can be found.

Interested candidates, please contact Jon Pasher (jon.pasher@canada.ca) to discuss this opportunity.

Landscape Science and Technology Division
Science and Technology Branch
Environment and Climate Change Canada / Government of Canada