

Opportunity Title: ORNL Post-Master's Research Associate in Scalable and High Performance Spatiotemporal Data Systems

Opportunity Reference Code: ORNL17-12-NSET

Organization Oak Ridge National Laboratory (ORNL)

Reference Code ORNL17-12-NSET

Description The Geographic Information Science and Technology (GIST) Group in the Computational Sciences and Engineering Division (CSED) is looking for Post Master Research Associates to support the design, development, and deployment of scalable and high performance spatiotemporal data systems that will feed a large number of high-impact, global-scale research and engineering activities related to geographic data science, geographic information systems, imaging science, remote sensing, photogrammetry, computer vision, machine learning, and quantitative social science. These systems, which will contain structured spatiotemporal data from a wide array of modalities and formats, shall enable rapid ingest, storage, querying, analysis, visualization, and product generation using all available optimizations (hardware and software). Sitting on top of these systems will be a variety of web-based services and APIs that make them easily accessible to other services as well as downstream users. Research Associates are expected to substantially contribute across all technical aspects of this activity. Potential opportunities and guidance for publications and presentations of research in professional journals and to the scientific community will be available and we strongly encourage participation. Appointments typically range from three months to one year subject to renewal upon availability and job performance.

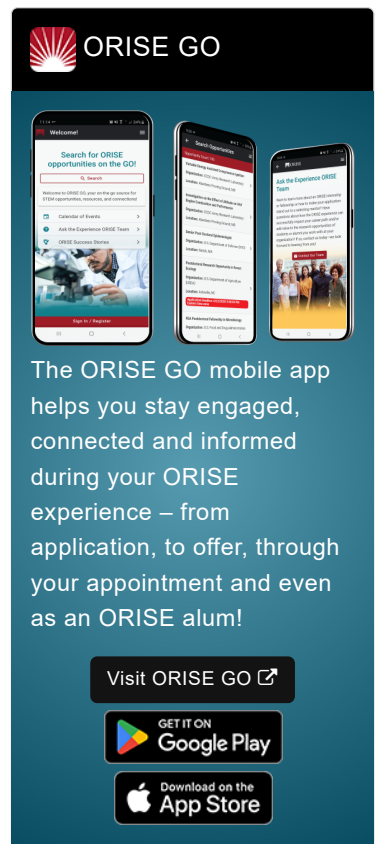
Qualifications A masters degree in data science, imaging science, remote sensing, geomatics, photogrammetry, civil engineering, geography, geographic information science, computer science or computer engineering, environmental engineering, electrical engineering, mathematics, statistics, natural sciences, or a closely related discipline that requires working with spatiotemporal data in general and remotely sensed data in particular is preferred.

REQUIRED:

- Experience with at least one of the following languages is required: IDL, MATLAB, Python, R, C/C++, C#, Java, JavaScript, Julia, Scala, Erlang
- Experience with parallel and distributed computing architectures including OpenMP, MPI, CUDA, OpenACC, OpenCL, and Apache Hadoop
- Experience with building web services
- Excellent communication (oral and writing), organization, and decision-making skills. Strong interpersonal skills and working effectively as a team member are essential.

PREFERRED:

- Experience with scalable and in-memory SQL, NoSQL, and NewSQL database technologies
- Experience with Docker and related containerization technologies



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- Experience with geospatial raster, vector, and point data
- Experience working with large amounts of data (i.e., "big data")
- Experience with building reactive microservices and OGC-compliant web services
- Experience with geospatial database technologies like PostGIS, GeoTrellis, GeoMesa, GeoWave, and MrGeo
- Experience with geospatial and image processing software packages and libraries like ENVI, IMAGINE, SOCET GXP, IDRISI, Opticks, OpenCV, OSSIM, ASF MapReady, Point Cloud Library, ArcGIS, GRASS, QGIS, GDAL, Proj.4, NITRO
- Experience with Deep Learning frameworks like Caffe, TensorFlow, CNTK, Theano, Torch
- Experience with Agile or Kanban development processes
- Experience with system architectures and design

- Eligibility Requirements**
- **Degree:** Master's Degree received within the last 60 month(s).
 - **Discipline(s):**
 - **Business** ([2](#) )
 - **Computer, Information, and Data Sciences** ([16](#) )
 - **Earth and Geosciences** ([21](#) )
 - **Engineering** ([27](#) )
 - **Environmental and Marine Sciences** ([14](#) )
 - **Life Health and Medical Sciences** ([45](#) )
 - **Mathematics and Statistics** ([10](#) )
 - **Social and Behavioral Sciences** ([3](#) )

Affirmation I certify that I have completed coursework towards a degree in science, technology, engineering, mathematics, or a related field.

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