Opportunity Title: Post-Master in Software Engineering
Opportunity Reference Code: ORNL16-14-CSMD

Organization	Oak Ridge National Laboratory (ORNL)
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Description The Computer Science Research Group in the Computer Science and Mathematics Division at Oak Ridge National Laboratory seeks to hire a Software Engineer to significantly contribute to the design, development, implementation, documentation, and delivery of new software capabilities for the Bellerophon Environment for Analysis of Materials (BEAM). This innovative new software system integrates ORNL's world-class experimental science facilities at the Institute for Functional Imaging of Materials (IFIM) and the Center for Nanophase Materials Sciences (CNMS) with the integrated computational and analytical power of the fastest supercomputer in America, Titan, at the Oak Ridge Leadership Computing Facility (OLCF) and other High Performance Computing (HPC) systems at the National Energy Research Scientific Computing Center (NERSC) to perform near real-time, scalable data analysis and visualization quickly and easily from a web-deliverable Java application. At the core of this new system is a web and data server that enables multiple, concurrent users to securely upload and manage large data sets ("Big Data"), execute materials science HPC workflows, and interactively engage analysis artifacts. This unique system allows material scientists at ORNL to execute cutting edge data analysis algorithms on DOE supercomputers and compute clusters on experimental data automatically and investigate the analysis with state-of-the-art 2D and 3D data views from anywhere in the world.

The successful applicant will work with a wide array of experts in the fields of computer science, data science, software engineering, material science, physics, and mathematics to design and develop new capabilities that will propel science at ORNL's IFIM and CNMS from "Big Data" to "Deep Data" to "Smart Data" exploration. The applicant will also be expected to significantly contribute to publications such as peer-reviewed journal articles, abstracts, and posters, as well as oral presentations at meetings and conferences.
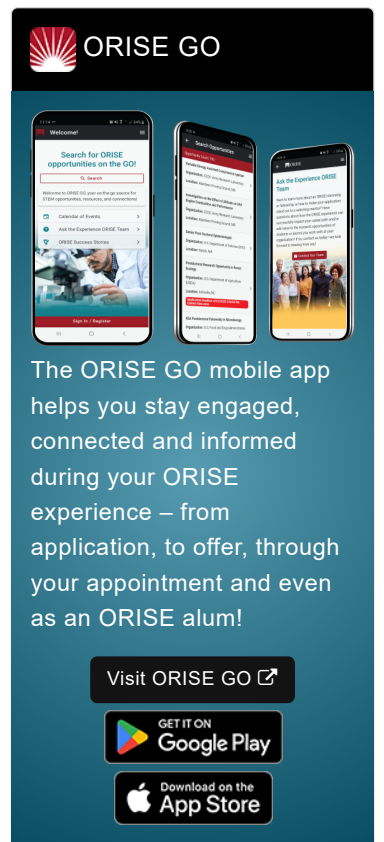
Qualifications Master's degree in computer science, physics, or engineering.

Preferred Technical Skills:
- Object-oriented software design and development with Java
- Development of multi-threaded, user-friendly desktop applications with Java and Swing
- Software development using the Eclipse IDE
- Experience using a version control system such as SVN or GIT
- Development of secure web services with PHP and MySQL in a LAMP environment
- Linux shell programming in Bash

Preferred Professional Skills:
- Strong scientific background or coursework in physics, material science, mathematics, and chemistry

- Excellent problem solving and oral / written communication skills
- Ability to work independently and with a team
- Ability to multi-task and complete projects within a specified timeframe

The following skills are considered a plus:
- Experience with High Performance Computing (HPC) platforms and compute clusters
- Experience with advanced data storage formats such as HDF5
- Experience with high-speed data transfer mechanisms
- Scientific programming with Python or FORTRAN

On-the-job training to learn these and other new skills is anticipated and encouraged.

Eligibility Requirements	• **Degree:** Master's Degree received within the last 60 month(s). • **Discipline(s):** ◦ **Computer, Information, and Data Sciences** (16 👁) ◦ **Engineering** (27 👁) ◦ **Physics** (16 👁) ◦ **Science & Engineering-related** (1 👁)
Affirmation	I certify that I have completed coursework towards a degree in science, technology, engineering, mathematics, or a related field.