SLAC National Accelerator Laboratory is a multipurpose laboratory for photon science, accelerator, particle physics and astrophysics research, located in Menlo Park, California. SLAC explores the ultimate structure and dynamics of matter and the properties of energy, space and time through accelerators and associated programs, user facilities and partnerships.

The Scientific Computing Application Division is looking for a research assistant to support the data management effort in the Linac Coherent Light Source (LCLS) photon data systems group. LCLS is the world's first x-ray free-electron laser, producing ultra-fast pulses of coherent x-rays with unprecedented brightness. A suite of x-ray instruments for exploiting the unique LCLS scientific capabilities has been produced. All these different instruments have adopted a common framework for data management.

The successful candidate will be the primary point of contact between LCLS and the Extreme Scale Scientific Workflow Analysis and Prediction project. This project will develop an integrated analytic performance modeling framework for distributed science workflows. These performance models will reflect observed end-to-end performance of current large scientific workflows and predict performance for future extreme scale workflows. This project will focus on experiments in the areas of light-sources (ALS, LCLS), astronomical surveys (PTF, LSST), and genomic sequence production (JGI). These workflows will provide test cases for validation of the models on well-understood use-cases and will enable predictions for future, much larger use-cases in a broad array of science areas. The modeling framework will build upon performance models developed specifically for components such as computing, data transfer and data access.

Specific responsibilities include, but are not limited, to the following: instrument the LCLS workflows, create models for the steady state behavior of the LCLS workflows and, later on, models reflecting realistic and complex features of workflow behavior (such as performance limits, bottlenecks, reaction to perturbations), develop models with sufficient predictive capabilities to allow prediction for new and future workflows, resource planning and cost benefit optimization.

This is a three year appointment.

**Qualifications - Required:**

- PhD degree in computer science, mathematics, physics, engineering or related field.

- Ability to work well in a research and development team.
- Strong conceptual and problem solving skills as well as the ability to identify and recommend solutions to improve efficiency.

- Must be detail oriented and be able to work to work with minimal supervision.

- Excellent verbal and written communication skills and ability to effectively conveying complex technical concepts.

Qualifications - Desired:

- Knowledge of monitoring tools.

- Ability to program in C/C++, Python, JavaScript.

- Experience with data management systems.

- Basic knowledge of Ethernet and Infiniband networks.

- Experience with relational databases.

How to apply
Interested candidates should submit the following online at https://academicjobsonline.org/ajo/jobs/4952

Application Materials Required: Submit the following items online at this website:
• Cover Letter
• Curriculum Vitae
• Research Statement
• Publication List
• Three Reference Letters (to be submitted by the reference writers at this site)

And anything else requested in the position description.
Further Info: http://home.slac.stanford.edu/ppap.html650-926-2086 2575 Sand Hill Road
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