

Job Description

Job Title:	Student Intern - Database Part Time Undergrad Summer
Job Opening ID:	645199
Location:	Livermore
Full/Part Time:	Part-Time
Regular/Temporary:	Temporary

About Sandia

Sandia National Laboratories is the nation's premier science and engineering lab for national security and technology innovation. We are a world-class team of scientists, engineers, technologists, post docs, and visiting researchers all focused on cutting-edge technology, ranging from homeland defense, global security, biotechnology, and environmental preservation to energy and combustion research, computer security, and nuclear defense.

To learn more, visit <http://www.sandia.gov>.

Department Description

The Computer Sciences Group at Sandia National Laboratories/CA conducts research, development, and systems engineering in computer science and engineering to address important national security problems. Staff members work in multi-disciplinary teams and apply their expertise and software engineering skills to a wide range of applications for customers including the Departments of Energy, Defense, and Homeland Security. Staff members also regularly engage with external customers and sponsors.

The group does extensive software research, development, and deployment of:

- Scientific Computing: algorithms and software tools that enable modeling and simulation to play a major role in engineering design, certification, and manufacturing
- Knowledge Environments: Distributed tools and visualization technologies that enable secure scientific, engineering, or analysis collaborations
- High Performance Computing: networking, storage, and load balancing technologies
- Decision Support: tools and technologies to support decision making in complex national security mission areas, including game-based training environments for crisis responders, simulation of social networked systems (including formation and evolution), and system-of-systems modeling of catastrophic events
- Data Analysis: algorithms and tools for supporting exploration, triage, analysis, and visualization of heterogeneous data
- Enabling technologies: algorithms for optimization (including under uncertainty), PDEs, solution of large-scale systems of equations, and uncertainty quantification
- Network Traffic Analysis: algorithms and tools to detect and prevent unauthorized actions on networks

How To Apply

Click on the "Apply" button at the top or bottom of this screen, follow the instructions to upload a resume, and complete the submission process to indicate your interest in this position.

Job Summary

Performs entry-level work within a science and engineering environment involving assignments that may include assisting with research, application of project design and diagnostics, testing and documentation, development and analysis of technology options, and assembly and troubleshooting.

Primary Job Duties

The Secondary Reachback Project is seeking a student intern who is interested in developing and improving web applications. The successful applicant will be a member of a software team, working with software engineers, scientists, and designers, to improve apps that visualize, plot, and analyze radiation data. The intern will be working at our California campus during the summer of 2014.

The Department of Homeland Security (DHS) Domestic Nuclear Detection Office (DNDO) is implementing a domestic system to detect attempts to import or transport radiological or nuclear material intended for illicit use. Secondary Reachback uses data, collected over many years from radiation monitors on highways, airports, and seaports, to develop products that enhance the ability to recognize anomalous radiation profiles in trucks, cars, and shipping containers. Secondary Reachback draws on the expertise of radiation physicists at Los Alamos and Sandia National Laboratories. Sandia National Laboratories has developed software to assist in analyzing existing data from radiation monitors to develop "signatures" that model threat and non-threat situations. These signatures provide federal and state officials with an additional method for determining whether a vehicle with an anomalous radiation profile is a threat.

The web applications perform algorithm analyses and data visualizations on radiation data. Data analysts use the applications to display historical data trends and to search/display radiation spectra. The successful candidate will be customizing NoSQL databases (MongoDB, Apache Solr, Hadoop), allowing PHP-based web applications to perform horizontally-scalable scientific analyses.

Knowledge, Skills & Abilities

General knowledge of technical principles and processes.

Understanding of the use a variety of research tools.

Good oral and written communication skills.

Ability to contribute in a team environment.

General knowledge of project management.

General knowledge and good understanding of a suite of software, including Microsoft Office.

Required

The successful candidate must meet the following Sandia Student Intern Requirements: Official acceptance into an accredited university's undergraduate program, full-time enrollment during the spring term immediately preceding the internship period (12 credit hours), a minimum cumulative GPA of 3.2/4.0, and the ability to work up to 40 hours per week during the internship duration. U.S. citizenship.

Desired

* Current undergraduate student pursuing a design or technical degree

* Experience or interest in app creation, distributed NoSQL databases, or software engineering

* Experience with web technologies, such as HTML, CSS, JavaScript, Ruby, JSON, and/or AJAX

* Experience with MySQL, SQLite, MongoDB, Solr, or Hadoop is a plus

* GPA of 3.5/4.0 or higher is a plus

Security Clearance

No clearance required.

This position does not currently require a Department of Energy (DOE)-granted security clearance.

Sandia will conduct a pre-employment background review that includes personal reference checks, law enforcement record checks, and employment and education verifications. Further, employees in New Mexico must pass a U.S. Air Force background screen for access to the work site. Substance abuse or illegal drug use, falsification of information, criminal activity, serious misconduct or other indicators of untrustworthiness can cause access to be denied or terminated, rendering the inability to perform the duties assigned and resulting in termination of employment.

If hired without a clearance, and one subsequently becomes required or you bid on positions that require a DOE-granted security clearance, a pre-processing background review that includes personal reference checks, law enforcement record and credit checks, and employment and education verifications may be conducted prior to a required federal background investigation. Applicants for DOE-granted security clearances must be U.S. citizens and be able to obtain and maintain the appropriate DOE security clearance as required for the position.

Benefits

At Sandia you will receive many benefits as a valued employee of a premier national multi-program engineering and science research laboratory. In our Total Rewards package you will enjoy competitive pay, great benefits, a stimulating, positive

environment and learning opportunities that will help build your career. More information may be found on our Careers website.

EEO

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