POSITION: Computer Science R&D   **JOB ID:** 61765

MANAGER: Howard Hirano

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DEPARTMENT DESCRIPTION

Sandia/California's Computer Sciences Group addresses national-security problems by conducting extensive software research, development, and deployment in the following areas: (1) scientific-computing algorithms and software tools that enable the use of modeling and simulation in engineering design, certification, and manufacturing; (2) knowledge environments that provide distributed tools and visualization technologies to enable secure collaborations; (3) networking, storage, and load-balancing technologies for high-performance computing; (4) tools and technologies (e.g., game-based training environments for crisis responders, simulations of social network systems, and system-of-systems modeling of catastrophic events) to support complex decision making; (5) data analysis algorithms and tools that support the exploration, triage, analysis, and visualization of heterogeneous data; (6) algorithms for optimization, PDEs, solutions of large-scale systems of equations, and uncertainty quantification; and (7) network traffic analysis algorithms and tools to detect and prevent unauthorized actions on networks.

JOB DESCRIPTION

We have multiple job openings for graduates to develop and deploy computer science tools and capabilities for national-security programs. Specific expertise in developing high-performance computing applications, visualization applications, collaboration technologies, gaming technologies, discrete-event and agent-based simulation, data mining, decision analysis, and information security is needed. Applicants will work in multidisciplinary teams, must enjoy working with customers and sponsors to develop design requirements, and must participate in the full project life cycle. Some travel is also required.

QUALIFICATIONS

An advanced degree (M.S., Ph.D., or equivalent) in computer science, computer engineering, or a related engineering or science discipline is required for this position. (Exceptional candidates with B.S. degrees may also be considered.) Candidates must have a GPA of 3.5 or higher. Other required qualifications include (1) software development experience, including familiarity with software engineering practices; (2) demonstrated initiative and the ability to solve problems, prioritize work, and make decisions; (3) excellent communication skills, including writing and formal briefings; (4) the ability to work in a collaborative research environment; and (5) a willingness to travel.

Expertise in one or more of the following areas is desired: (1) large-scale scientific computing; (2) the design and analysis of scalable, distributed algorithms in large-scale distributed computational environments (e.g., wireless sensor networks or high-performance parallel computing environments); (3) software development for distributed and/or multitier applications; (4) supervised and unsupervised machine learning; (5) data fusion; (6) discrete-event or agent-based simulation; (7) decision science and game theory; (8) expert- or rule-based reasoning engines; (9) numerical and statistical analysis and/or visualization methods; (10) Web-based application development, including Web services technologies and standards; (11) UNIX operating system programming skills, including development experience in the Linux kernel or a real-time embedded operating system; (12) object-oriented programming techniques and design patterns; (13) programming in Java, C, C++, C#, or Python; (14) computer hardware architecture; (15) software and firmware development on microcontroller and programmable logic devices, such as FPGAs; and (16) the design and development of applications using modern visualization techniques.

Candidate must be able to obtain a U.S. Department of Energy security clearance for this position. To obtain a security clearance, U.S. citizenship is required.

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