POSITION: Systems & Enterprise Modeling   **JOB ID:** 61964

MANAGER: Paul Nielan

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, postdocs, 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://ca.sandia.gov/casite/.

DEPARTMENT DESCRIPTION

Working closely with system-analysis and system-engineering departments, the Exploratory Computer and Software Engineering department designs and creates large-system models for a diverse set of customers, including the Departments of Homeland Security, Energy, and Defense. Enterprise and system models are key capabilities that are playing ever-increasing roles in homeland-security analysis, planning, training, and operations. These models include submodels that cover, for example, threat characterization, agent detection, agent transport, population movement and health, incident response, and medical treatment. These simulations and trade-off studies help evaluate and improve architectures, response plans, and concepts of operation while simulation-driven exercises provide federal, state, and local decision makers and responders with increased opportunities to train. Our department supports increasing national preparedness against biological, nuclear, chemical, and radiological terrorism, as well as natural disasters (e.g., hurricanes and earthquakes), across the planning, detection, and response phases. We also develop applications in the borders and transportation domains. We use both system-dynamics and entity/agent-based approaches to create system models and then deliver these models as applications, virtual environments, and interactive single-player and multiplayer games. Our staff members design and build frameworks that enable the rapid development of large-system models. We also develop software that is an integral part of deployed chemical- and biological-detection systems.

JOB DESCRIPTION

Successful candidates in these technical staff positions will develop complex system models that cut across interdisciplinary domains. Creating successful system models requires significant interaction outside of Sandia (e.g., in Washington, DC) to understand key system drivers, trade-offs, and constraints. Thus, our department seeks individuals with a strong understanding of modeling and simulation; good software-development skills; the desire to work both individually and within team settings; and, most importantly, the desire to frame and solve problems from a systems viewpoint. Staff members will eventually lead or develop new ideas and programs that bring system modeling and simulation to bear on important national-security issues.

QUALIFICATIONS

An advanced degree in computer science, computer engineering, or a related engineering or science discipline is required for this position, as is a strong record of academic performance. (Ph.D. degrees are desired, but strongly qualified M.S. candidates will also be considered.) Other requirements include (1) software development experience in multiple languages; (2) demonstrated initiative and the abilities to solve problems, prioritize work, and make decisions; (3) excellent communication skills, including strong writing, interpersonal, and formal-briefing capabilities; (4) the ability to work in a collaborative research environment; and (5) a willingness to travel.

Desired qualifications include a background in national-security problem areas, experience with modeling and simulation architectures (i.e., HLA), experience in computer gaming development, and expertise in Java.

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.

Apply at: http://ca.sandia.gov/casite/employment/. Click on Browse current job openings, and type the Job ID number **61964** into the Keywords box. Click on the Search button to access this job opening, and complete an online application.

ABOUT SANDIA

Sandia provides employees with a comprehensive benefits package that includes medical, dental, vision, and a 401(k) with company-match. Our culture values work-life balance; we offer programs such as flexible work schedules with alternate Fridays off, on-site fitness facilities, and three weeks of vacation. In addition, Sandia/California enjoys close proximity to San Francisco, the Silicon Valley, first-tier universities, and diverse cultural and year-round recreational opportunities.

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