

## Senior Software Engineer Job Description

A Senior Software Engineer (SE) is a skilled and experienced software developer responsible for the detailed design, implementation, and testing of subsystems and system components. A Senior SE is able to build a wide variety of software subsystems and components efficiently and effectively, given only a requirements specification and constraints. A Senior SE is able to develop and sustain these subsystems and software components in complex, multi-vendor, multi-platform environments. ***This position is located in San Diego, California.***

### Duties and Responsibilities

Take initiative in performance, working independently and with groups to effectively accomplish project objectives and engage in the following:

- Interact with software systems engineer or other technical leader to understand subsystem and component specifications and recommend changes to facilitate efficient and effective development.
- Interact with representatives of other industrial and government groups to understand and/or recommend data interchange formats, APIs, messaging strategies, application server software, as well as hardware and virtual machine requirements.
- Design and document subsystems and system components consisting of (in OO terms) several objects working together to execute an encapsulated function of the larger system.
- Implement and debug subsystems and components.
- Write and execute tests for subsystems and components.
- Participate in integrated test sessions of components and subsystems on test and production servers
- Determine and communicate the implications of system-level decisions on subsystems and components, and help determine how best to mitigate or take advantage of these implications.
- Determine and communicate the requirements and capabilities of components within the context of the larger system, project, and team.
- Support management of the team's technical infrastructure (e.g., repository, build system, testing system) under guidance from the systems engineer or other project leader.
- Participate in efforts to share SE technology and expertise within the company; mentor junior and aspiring SE engineers.
- Perform tasks efficiently and work together with team to ensure project success.
- Perform other duties as assigned.

### Reporting Structure

- This position is part of the technical staff reporting to the COO
- This position may report on a matrixed basis to the project leadership of the project(s) to which it is assigned.
- This position does not have any direct reports, although project team members may report to this individual via a matrix assignment where serving in a leadership role.

### Required Skills and Experience

#### Required

- Three - five years of experience independently designing and implementing small or medium-sized software systems and components.
- Successful design and implementation of multiple software components and subsystems.
- Ability to communicate the design and implementation of software systems including relevant strengths/weaknesses and reasons for implementation decisions.
- In-depth knowledge of at least two programming languages, at least one of which is Java or C++; ability to use one or more IDEs (e.g., Eclipse) and interactive debuggers effectively.
- Knowledge of Linux operating system and at least two application, database, messaging or web server systems.

- U.S. citizenship and ability to qualify for and hold security clearances is **required**, due to the nature of the work assigned to this position.
- Proven experience in solving challenging technical problems.
- Good task estimation and prioritization skills.
- Proven ability to support multiple projects and objectives simultaneously and efficiently.
- Ability to travel to client or other sites to support technical presentations, testing, and integration.
- BS or MS in engineering, computer science, or a related discipline or equivalent experience.

**Desired**

- Demonstrated experience in design and debugging of asynchronous (e.g. multi-threaded) systems.
- Experience with web environments including web scripting languages, REST and SOAP api's, and messaging protocols.
- Experience in one of the following (or a similar field): human behavior modeling, cognitive modeling, multi-agent systems, agent-based social simulation, intelligent user interfaces, complex adaptive systems, decision support systems, simulation, robotics, data fusion, and/or game development.