

# UNIVERSITY OF SOUTHERN CALIFORNIA

## Senior Software Engineer

Job Code: 167517

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OT Eligible: No

Comp Approval: 2/16/2022

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### **JOB SUMMARY:**

Designs, develops and maintains software solutions and frameworks, and supports the determination of operational feasibility (e.g., evaluating analyses, defining problems, developing solutions). Implements software solutions, prioritizing information needs and collaborating with a broad range of customers, partners, and key stakeholders.

### **JOB ACCOUNTABILITIES:**

**\*E/M/NA**    **% TIME**

_____	_____	Writes, edits and updates production-ready software application code that's easily testable and performs upon implementation. Evaluates and applies various algorithms, methodologies, and tools (e.g., Python, Amazon SageMaker, AWS Lambda) to determine available solutions and associated risks and benefits. Ensures code is maintainable, supportable, and scalable with business growth.
_____	_____	Architects services and systems using design patterns allowing for iterative, autonomous development and future scaling. Utilizes abstractions and code isolation, actively working with relevant security stakeholders to search for vulnerabilities. Drives change efforts, fostering a culture of prioritization in alignment with organizational strategy. Anticipates future use cases and makes design decisions that minimize costs for future changes.
_____	_____	Utilizes an automation framework to design and implement tests of the efficiency, responsiveness, and regulation compliance of web applications. Uses quality metrics to identify gaps, writing and performing unit tests in accordance with testing pyramid, and employing systematic approaches for debugging all issues within designated scope. Ensures integrity of code by peer review.
_____	_____	Manages work activities against the software development lifecycle. Stays current with technology, industry standards and best practices. Facilitates innovation and the creation and initiation of continuous process improvements. Leverages the latest technology and anticipates impact on departmental/university software services.
_____	_____	Develops and prioritizes realistic, customer-focused solutions, leveraging insights on customer pain points and needs. Independently handles risk and change, following team/project philosophies, operational data, and engineering strategies in uncertain situations. Builds and maintains effective customer and stakeholder relationships. Handles and routes requests to appropriate parties for tracking and resolution, providing timely follow-ups and feedback.
_____	_____	Promotes an environment that fosters inclusive relationships and creates unbiased opportunities for contributions through ideas, words, and actions that uphold principles of the USC Code of Ethics. Builds relationships with fellow engineers, helping resolve each other's problems when requested, and seeking mentorship or guiding junior staff. Contributes to university compliance and security governance policies by embedding standards, procedures, and quality measures into work plans and workflows.

Performs other related duties as assigned or requested. The university reserves the right to add or change duties at any time.

**\*Select E (ESSENTIAL), M (MARGINAL) or NA (NON-APPLICABLE) to denote importance of each job function to position.**

**EMERGENCY RESPONSE/RECOVERY:**

Essential:  No

Yes In the event of an emergency, the employee holding this position is required to "report to duty" in accordance with the university's Emergency Operations Plan and/or the employee's department's emergency response and/or recovery plans. Familiarity with those plans and regular training to implement those plans is required. During or immediately following an emergency, the employee will be notified to assist in the emergency response efforts, and mobilize other staff members if needed.

**JOB QUALIFICATIONS:**

**Minimum Education:**

Bachelor's degree

Combined experience/education as substitute for minimum education

**Minimum Experience:**

5 years

**Minimum Field of Expertise:**

Five years' experience with programming and documentation procedures, methods and operator instructions. Experience conducting unit/performance tests, systems integration and user acceptance. Demonstrated experience with one or more relevant programming languages, able to gain needed contexts for domains. Experience developing and deploying prototypes to scalable pipelines and applying software development lifecycle principles. Demonstrated ability to interpret and apply scalability, reliability, and software engineering best practices (e.g., version control, testing, developer and end-user documentation). Excellent organization, planning, analytical and problem-solving skills. Proven ability to provide technical expertise and creative solutions while aligned to organizational objectives and customer needs. Experience weighing economic costs and values objectively, supporting coworkers on a project basis, and contributing to discussions in a civil manner. Excellent written and oral communication skills, able to provide both detailed information as well as summaries to varied audiences. Substantial knowledge of security concepts, familiarity with secure code development techniques, and understanding of scalable and automated solutions. Ability to build strong, positive working relationships and rapport with diverse groups of team members.

**Preferred Education:**

Bachelor's degree

**Preferred Experience:**

8 years

**Preferred Field of Expertise:**

Bachelor's degree in computer sciences, computer engineering, electrical engineering or related fields. Eight years' experience in IT/programming. Proficiency with Python, Javascript, C/C++, Java, Ruby and/or other advanced programming languages. Experience with Unix/Linux programming and/or administration. Experience in higher education.

**Supervises: Level:**

May oversee staff, students and/or resource employees

**SIGNATURES:**

**Employee:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Supervisor:** \_\_\_\_\_ **Date:** \_\_\_\_\_

The above statements are intended to describe the general nature and level of work being performed. They are not intended to be construed as an exhaustive list of all responsibilities, duties and skills required of personnel so classified.

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