Senior Software Engineer (Informatics)
Job Description

JOB INFORMATION

Job Code:	164005
Job Title:	Senior Software Engineer (Informatics)
FLSA Status:	Exempt
Supervisory:	May oversee staff, students and/or resource employees
Job Family:	Systems Engineering
Job Family Group:	Information Technology
Management Level:	7 Individual Contributor

JOB SUMMARY

Evaluates and applies various algorithms, methodologies and tools to determine available solutions and associated risks and benefits. Utilizes automation framework to design and implement tests of the efficiency, responsiveness, and regulation compliance of web applications. Architects services and systems using design patterns allowing for iterative, autonomous development and future scaling. Fosters culture of prioritization in alignment with organizational strategy.

JOB QUALIFICATIONS:

Education

Req	*Pref*	*Degree*	*Field of Study*	
X		Bachelor's degree		
	X	Master's degree		

Additional Education

Check here if experience may substitute for some of the above education.

	Combined experience/education as substitute for minimum education

Work Experience

Req	*Pref*	*Work Experience*	*Experience Level*	
X		5 years		
	X	7 years		

Additional Work Experience

Check here if education may substitute for some of the above work experience.

	Combined experience/education as substitute for minimum work experience

Knowledge, Skills and Abilities

Req	*Pref*	*Functional Skills*
X		Bachelor's degree or higher in computer sciences, computer engineering, electrical engineering, or related fields. Five years' experience with programming and documentation procedures, programming methods and operator

Knowledge, Skills and Abilities

Req	Pref	Functional Skills
		instructions. Demonstrated experience with one or more relevant programming languages, and the ability to gain needed contexts for domains. Experience developing and deploying prototypes to scalable pipelines, and applying software development life cycle (SDLC) principles. Demonstrated ability to interpret and apply scalability, reliability, and software engineering best practices (e.g., version control, testing, developer and end-user documentation). Ability to work independently on complex programming activities. Excellent organization, planning, analytical and problem-solving skills. 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.
	X	Proficiency with Python, Javascript, C/C++, Java, Ruby and/or other advanced programming languages. Experience with Unix/Linux programming and/or administration.

Other Job Factors

JOB ACCOUNTABILITIES

	% Time	Essential	Marginal	N/A
Writes, edits and updates production-ready software application code that's easily testable. Evaluates and applies various algorithms, methodologies and tools (e.g., Python, Amazon SageMaker, AWS Lambda) to determine available solutions and associated risks and benefits. Analyzes available data and resources to build feasible and scalable model-view-presenter (MVP) software.				
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.				
Architects services and systems using design patterns allowing for iterative, autonomous development and future scaling. Anticipates future use cases, and makes design decisions that minimize costs for future changes. Utilizes abstractions and code isolation, actively working with relevant security stakeholders to search for vulnerabilities.				
Independently handles risk and change within project teams, following team/project philosophies, operational data, and engineering strategies in uncertain situations. Documents all stages of the software development process, ensuring integrity of code by peer review. Builds relationships with fellow engineers, helping resolve each other's problems when requested, and seeking mentorship or guiding junior staff.				
Drives change efforts, fostering a culture of prioritization in alignment with organizational strategy. Ensures expectations are appropriately clarified for continuous integration and incremental delivery. Communicates all research, methodology, and results to leadership and relevant internal/external stakeholders, and research and open-source communities.				

Other Requirements

Essential:	Emergency Response/Recovery	Essential:	Mandated Reporter
	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.		A mandated reporter who in his or her professional capacity has knowledge of, or reasonably suspects a person who is under the age of 18 years, elderly, or a dependent adult has been the victim of abuse or neglect must report the suspected incident. The reporter must contact a designated agency immediately or as soon as practically possible by telephone or in writing within 36 hours. By virtue of the associated job duties, this position qualifies as a mandated reporter as required by state law and USC's policy at: https://policy.usc.edu/mandated-reporters/

Campus Security Authority (CSA)	Essential:
By virtue of the associated job duties, this position qualifies as a Campus Security Authority as required by law and USC's policy at: https://dps.usc.edu/alerts/clery/	

ACKNOWLEDGMENTS

The above statements reflect the essential and non-essential functions as necessary to describe the principle contents of the job. They are not intended to be a complete statement of all work requirements or duties that may be required of the position. I understand that I may be asked to perform other duties as assigned. USC reserves the right to add or change duties at any time.

The University of Southern California is an Equal Opportunity Employer. USC prohibits discrimination on any basis protected under federal, state, or local law, regulation, or ordinance or university policies. All employment decisions are based on individual qualifications and business need.

I acknowledge receipt of this job description and its associated physical requirements. I have read and understand the job description and job requirements and agree to abide by their contents. I realize that duties may be requested of me that are not specifically stated herein. I understand that I will be expected to adjust to potential fluctuations in work volume. I understand that, if I have any questions about the essential functions or expectations of my position, my supervisor and/or HR partner are available to discuss them with me.

_____   _____   _____
Print Employee Name   Signature   Date

_____   _____   _____
Print Manager Name   Signature   Date

This job description describes the general nature and level of work required by the position. It is not intended to be an all-inclusive list of qualifications, skills,
duties, responsibilities or working conditions of the job. The job description is subject to change with or without notice, and Management reserves the right to add, modify or remove any qualification or duty. Nothing in this job description changes the existing at-will employment relationship between the university and the employee occupying the position.