USC University of Southern California

Computational Scientist (ITS)
Job Description

JOB INFORMATION

Job Code:	167205
Job Title:	Computational Scientist (ITS)
FLSA Status:	Exempt
Supervisory:	
Job Family:	Computer Research
Job Family Group:	Information Technology
Management Level:	7 Individual Contributor

JOB SUMMARY

Provides direct outreach and support services for research computing-related tasks, serving faculty, research staff, graduate students, and academic programs across the university. Delivers technical support for new research projects and ongoing academic endeavors related to advanced computing.

JOB QUALIFICATIONS:

Education

Req	Pref	Degree	Field of Study	
X		Master's degree	Computer Science	Or
X		Master's degree	Computer Information Systems	Or
X		Master's degree	in related field(s)	
	X	Doctorate	Computer Science	Or
	X	Doctorate	in related field(s)	

Additional Education

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

X	Combined experience/education as substitute for minimum education

Work Experience

Req	Pref	Work Experience	Experience Level	
X		3 years	of of experience in one or more relevant field (i.e., information technology, computational science and engineering, high-performance or cloud computing).	
	X	5 years		

Additional Work Experience

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

X	Combined experience/education as substitute for minimum work experience

Knowledge, Skills and Abilities

Req	Pref	Functional Skills
X		Demonstrated knowledge of the research process, proposal lifecycle, data lifecycle, and workflows.
X		Advanced knowledge in Linux/Unix and extensive experience in building, installing, and maintaining open source software in high-performance computing environment.
X		Demonstrated experience conducting research in a higher education environment and providing technical support for research projects.
X		Familiarity with shared memory and distributed memory parallelism (e.g., OpenMP, MPI, OpenACC), accelerators (e.g., GPUs), and large-scale file systems.
X		Proven expertise in Unix/Linux shell scripting and one or more programming language (e.g., C/C++, Python, Perl, MATLAB).
X		Strong debugging and troubleshooting skills.
X		Strong understanding of high-performance computing topics as well as the data and programming efforts involved in HPC/Cloud.
X		Experience communicating technical details to non-technical audiences (e.g., documentation, training, public speaking).
X		Proven ability to successfully manage and prioritize multiple projects and plans, implement project specifications, report project status, identify delays, and raise concerns.
X		Exceptional interpersonal skills, including demonstrated ability to interact effectively with a variety of stakeholders including researchers, IT staff, IT leadership, and university administrators.
X		Awareness of compliance regulations surrounding research data including federal requirements and granting agency standards.
X		Ability to develop positive working relationships and a strong rapport with team members.
	X	Ability to translate scientific research needs into technical computing solutions and conduct computationally effective research projects.
	X	Advanced understanding of high-performance computing, high-performance networking, and domain-specific applications to support collaborative research.
	X	Experiences in container technologies (e.g., Docker, Singularity), cloud computing solutions, and other technology used in various domains.
	X	Database management skills, knowledge of version control protocols, extensive experience with large-scale application performance engineering and optimization.
	X	Experience with user training, teaching students, and developing education programs.
	X	High degree of motivation and ability to work with faculty, researchers, students and IT professionals.
	X	Ability to manage multiple assigned tasks and projects with minimal supervision.

Other Job Factors

JOB ACCOUNTABILITIES

	% Time	Essential	Marginal	N/A
Develops testing procedures and production documentation, contributing to the development and engagement of initiatives and projects. Interfaces with researchers as a technical resource, contributing to workflows and assessing and identifying computational requirements to align with research computing.				
Supports collaborative efforts at the institutional, regional, and national levels to identify and promote research and development opportunities in support of the university's strategic research plan. Investigates and addresses researcher inquiries, and presents complex technical concepts in simple, straightforward manners. Engages with and encourages engineers to collaborate on initiatives as needed.				
Develops, maintains, and presents training and education efforts for researchers and academic programs to enable the optimal use of high-performance computing (HPC). Teaches training workshops, developing or updating the curriculum as necessary. Acquires a strong understanding of research topics surrounding the capabilities of advanced computing (e.g., HPC, cloud, containers) as well as leading-edge initiatives across the industry.				
Builds and maintains collaborative relationships with team members, peers and department leaders. Supports the vision for research computing program. Works closely with team members and management to implement and support effective				

JOB ACCOUNTABILITIES

	% Time	Essential	Marginal	N/A
solutions for research community. Maintains currency with technology, standards, and best practices. Supports process improvement efforts within the team and across the department.				
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.				

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/		No

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.