

San José State University Research Foundation

Position: Research Associate: Software Development

DEPARTMENT: NASA Ames Research Center

IMMEDIATE SUPERVISOR: Project Director

POSTING DATE: 08/17/2022

CLOSING DATE: Open Until Filled

SALARY: \$90,000-\$110,000 annually/DOE

EXEMPT STATUS: Full-Time, Exempt, Benefited

GENERAL NATURE OF POSITION

The Department of Psychology at San José State University is involved in collaborative research with civil service scientists from the Human-Autonomy Teaming Laboratory (referred to as the HAT Lab) in the Human Systems Integration Division at NASA Ames Research Center in Mountain View, CA. We seek a research associate to collaborate on and engage in software development activities to further NASA's aeronautics research.

The research performed in the HAT Lab focuses on how human operators interact with automation and other aeronautics-related technologies. This includes designing and refining interfaces for ground control stations for Unmanned Aircraft Systems (UAS), as well as developing a manned, electric Vertical Takeoff and Landing (eVTOL) simulator, with corresponding displays, controls, and visual systems. The position will involve software development for a variety of systems that are utilized by the team for human-in-the-loop simulations. Like any medium-fidelity simulation facility, a variety of hardware and software components are needed to provide a realistic simulation environment. These systems range from collision avoidance algorithms and simulated traffic generators to air traffic controller stations and multi-vehicle ground control stations. The ideal candidate for this position would be comfortable moving from system-to-system to help develop and prepare for real-time simulations with pilot participants. We are seeking someone who is smart, a fast learner, disciplined and professional.

The HAT Lab, like NASA, prizes a healthy work-life balance. We believe that fostering a comfortable workplace for everyone is important! Our work environment is open, collaborative, and welcoming; we are a diverse and tight-knit team that enjoys off-site team building events and activities. You will contribute to our wide diversity of skills and incorporate new ideas into our environment. You will work with people across NASA, hear about upcoming missions and how we help support them.

The HAT Lab in the Human Systems Integration Division at NASA Ames Research Center is a federal facility. Due to rules imposed by NASA, the Division will not accept applications from individuals who are not U.S. Citizens or Legal Permanent Residents of the U.S.

ESSENTIAL DUTIES & RESPONSIBILITIES

1. Design, build, and test software for airspace-operations research.
2. Develop laboratory capabilities for simulation, real-time data collection and analysis, monitoring and visualization.
3. Integrate third-party open source and commercial packages into existing infrastructure.
4. Create high quality, robust, and easily maintainable software in an iterative development environment.
5. Document and track software tasks in issue tracking systems.
6. Build and enhance scripts that exercise end-to-end functionality.
7. Work on a wide range of technologies including full stack development and databases.
8. Collaborate with researchers to prepare, conduct, and analyze experiments relating to the use of software tools in airline operations, urban air mobility, and drones.

INTERPERSONAL CONTACTS

Reports to the project director. Interacts with SJSURF staff and civil service staff daily.

SUPERVISORY RESPONSIBILITIES

None, though may be called upon for advice and direction by others.

QUALIFICATIONS

Education and Experience

- Bachelor's degree or higher in Computer Science, Computer Engineering or related discipline, or equivalent work experience
- 5+ years of experience with C# and WPF required
- 5+ years of experience with C++ or Java required
- 5+ years of experience in flight simulation engineering required
- 1+ years of experience with GUI framework: JFC a plus
- 2+ years of experience with relational and NoSQL database system required
- 2+ years writing scripts to automate various development and testing activities required
- 2+ years working an agile development environment a plus
- 2+ years of experience integrating multiple internal and external systems using APIs required
- 1+ years of Real-time graphics experience required.

Knowledge, Skills, Abilities Required

- Methodical and detail oriented with solid analytical skills and problem-solving ability required.
- Capacity and willingness to adopt new methodologies and skills in line with core responsibilities required.
- Willingness to share knowledge and skills and willingness/ability to help train colleagues required.

- Excellent written and oral communication skills required.
- Ability to work effectively and efficiently in culturally and organizationally diverse research teams required.
- Knowledge of distributed architecture required.
- Working knowledge of Git.
- Knowledge of scientific experimentation and the various phases therein (experimental design, research methods, data mining & analysis, etc.) desired.
- Knowledge of inter- and intra-process communications desired.
- Knowledge of database design desired.
- Knowledge of machine learning desired.
- Work within time constraints and under pressure.

Physical Requirements

- Ability to work on-site when needed (NASA Ames Research Center). Employee must meet security qualifications for entrance to the Center, including an Agency background check.
- Frequent and ongoing use of a computer terminal to conduct a variety of software development tasks.
- Strength, dexterity, and coordination and/or ability to use a computer keyboard and read a video display terminal on a regular basis.
- Ability to install and move minor pieces of equipment: monitors, computers, joysticks, projectors, etc.
- The location is equipped for full accessibility.

NOTE: This position description intends to describe the general nature and level of work being performed by people assigned to this job. It is not intended to include all duties and responsibilities. The order in which duties and responsibilities are listed is not significant.

BENEFITS

The San José State University Research Foundation (SJSURF) provides excellent benefits package to benefited employees. **The comprehensive benefit package includes:**

- a) Nine company subsidized CalPERS health insurance plans to choose from (employee contributions differ according to plan and level of coverage).
- b) Employer paid dental and vision for both employee and eligible dependents.
- c) Life, AD&D, LTD with supplemental coverage opportunities.
- d) 14 paid federal & state holidays.
- e) Retirement Plan: 403 (b) employee contribution plan component and a 403 (b) employer contribution component, which vests immediately.
- f) Vacation hour accruals and separate sick hour accumulations.
- g) Employee discounts.

Please visit the [Benefits & Compensation page](#) on the SJSU Research Foundation website for more detailed information.

COVID-19 VACCINATION POLICY

As required by the CSU Vaccination Policy, all new hires must be fully vaccinated against COVID-19 starting on September 30, 2021. Fully vaccinated means it has been 14 days after the second dose of the Pfizer or Moderna vaccine has been given, or it has been 14 days after the one dose of the J&J vaccine has been given. Additionally all employees are required to have booster shots and provide proof to SJSU by 02/28/2022 or after the six months from the final dose of the original vaccination, whichever is later. Proof of being fully vaccinated does not need to be disclosed until a job offer has been made, and proof must be submitted after the acceptance of the job offer. New hires may request a reasonable accommodation of the COVID-19 vaccination requirement based on medical or religious reasons. New hires must submit their request for an accommodation form after they accept the job offer, and before their scheduled start date. The reasonable accommodation provided to the employee, if any, will depend on the employee's job and the applicable facts, but it may include weekly COVID-19 testing. New hires who do not submit, before their scheduled start date, proof of being fully vaccinated or a request for reasonable accommodation will have their job offer revoked.

APPLICATION PROCEDURE

To apply for this position, an applicant must submit a formal application for employment, as well as a resume and a cover letter. The formal employment application is located on the SJSURF website on the [Forms page](#). **All candidates must submit their application materials to foundation-jobs@sjsu.edu. Please add **RA SD** to the subject line of the email.**

A background check (including a criminal records check) must be completed satisfactorily before any candidate can be offered a position with the SJSURF. Failure to satisfactorily complete the background check may affect the application status of applicants or continued employment of current SJSURF employees who apply for the position.

REASONABLE ACCOMODATION

The San José State University Research Foundation (SJSURF) is committed to providing access, equal opportunity, and reasonable accommodation for individuals with physical or mental disabilities in the employment, recruitment, examination, hiring and interviewing processes. If you are a job seeker with a physical or mental disability and require a reasonable accommodation to search, apply, or interview for a job opening or otherwise need a reasonable accommodation during the application and hiring process, please contact us at foundation-jobs@sjsu.edu. In the email message, please indicate your full name, phone number and the type of assistance required. You must not reveal the underlying medical reason for your needed reasonable accommodation or otherwise disclose confidential medical information.

ABOUT THE SJSU RESEARCH FOUNDATION

SJSURF employment is separate and distinct from San José State University or state of California employment. SJSURF employees are not employees of SJSU or of the state of California.

SJSURF is a non-profit auxiliary of San José State University. SJSURF is totally self-supported. The majority of the organization's funding comes from the federal government, and other public and private entities. With annual revenues totaling over \$65 million, programs managed through SJSURF cover a rich diversity of applied research, public services, and educational related activities.

SJSURF is an equal opportunity employer and does not discriminate on the basis of race, color, creed, gender, religion, marital status, registered domestic partner status, age, national origin,

ancestry, physical or mental disability, medical condition, sex, genetic information, sexual orientation, military and veteran status or any other consideration made unlawful by federal, state, or local laws. It also prohibits unlawful discrimination based on the perception that anyone has any of those characteristics, or is associated with a person who has or is perceived as having any of those characteristics.