

# San José State University Research Foundation

**Position:** Research Associate: Software Development

**DEPARTMENT:** NASA Ames Research Center

**IMMEDIATE SUPERVISOR:** Project Director

**POSTING DATE:** 02/06/2023

**CLOSING DATE:** Open Until Filled

**SALARY:** \$120,000 to \$140,000 annually/DOE

**EXEMPT STATUS:** Full-Time, Exempt, Benefited

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## GENERAL NATURE OF POSITION

Are you passionate about the future of aviation? How about developing technologies that enable human operators and automated systems to interact effectively? Would you like to join NASA's efforts toward building the next generation of air transportation?

The San José State University Research Foundation (SJSURF) is looking for a Research Associate in software development to help advance NASA's aeronautics research. SJSURF works alongside civil servants from the Human-Autonomy Teaming Laboratory (HAT Lab) to design and develop software for human-in-the-loop simulation. The team works onsite at NASA Ames Research Center in Mountain View, CA, right in the heart of Silicon Valley.

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 air traffic generators to air traffic controller stations and multi-vehicle ground control stations.

The ideal candidate for this position would be comfortable working with a multi-disciplinary team and 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.

Our team values a healthy approach to work-life balance and believes in fostering an open, collaborative, and comfortable workplace for all. We celebrate each team member's unique experiences and contributions. Join us and contribute to our wide diversity of skills and incorporate your ideas into our environment. You will work with people across NASA and hear about upcoming missions and how we help support them.

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## 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.
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## INTERPERSONAL CONTACTS

- Reports to the Project Director.
  - Interacts with SJSURF staff and civil service staff daily.
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## SUPERVISORY RESPONSIBILITIES

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

### Education and Experience

- Bachelor's degree or higher in Computer Science, Computer Engineering or related discipline, or equivalent work experience.
- Substantial experience in object-oriented development in one or more of: C#, C++ or Java.
- Experience required for the following:
  - writing scripts to automate various development and testing activities
  - integrating multiple internal and external systems using APIs
  - distributed computing (inter- and intra-process communications)
  - real-time simulation/gaming
  - real-time graphics
  - experience with the WPF GUI framework, JFC a plus
  - multi-process and multi-threaded applications

### Knowledge, Skills, Abilities

#### Required:

- Methodical and detail oriented with solid analytical skills and problem-solving ability.
- Capacity and willingness to adopt new methodologies and skills in line with core responsibilities.
- Willingness to share knowledge and skills and willingness/ability to help train colleagues.
- Excellent written and oral communication skills.
- Ability to work effectively and efficiently in culturally and organizationally diverse research teams.
- Working knowledge of Git.

#### Desired skills or willingness to learn:

- Knowledge of scientific experimentation and the various phases therein (experimental design, research methods, data mining & analysis, etc.).
- Aviation computation.
- Working knowledge of DBMS utilization.
- Knowledge of machine learning a plus.
- Work within time constraints and under pressure.
- Agile development experience a plus.

#### Physical Requirements

- Located at NASA Ames Research Center. Therefore, this employee must meet security qualifications for entrance to Center.
- Candidate will be a U.S. citizen or permanent resident.
- Frequent and ongoing use of a computer terminal to conduct a variety of software development tasks.
- Ability to install and move minor pieces of equipment: monitors, computers, joysticks, projectors, etc.
- The location is equipped for full accessibility.

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**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.

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#### **BENEFITS**

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

- a) Four company 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.

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#### **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.

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## 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](mailto: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 the continued employment of current SJSURF employees who apply for the position.

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## REASONABLE ACCOMMODATION

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, interviewing and hiring 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](mailto: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.

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## 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.