San Jose State University Research Foundation

Position: Senior Research Associate (Flight Mechanics Modeling & Simulation)

DEPARTMENT: Research will be done under the auspices of the Psychology Department at San José State University

IMMEDIATE SUPERVISOR: Project Director, NASA Program

POSTING DATE: August 17, 2020

CLOSING DATE: August 24, 2020

SALARY: $126,000 annually

DOQ/E

BENEFITS: Exceptional benefits for employees and eligible dependents: Company subsidized CalPERS medical selections, 3 PPO's and 7 HMO's; company paid dental and vision insurance for employees and eligible dependents; Life, AD&D, and LTD coverage; paid federal and state holidays; a 403 (b) retirement plan with a 7% employer retirement contribution following 1 year of benefited employment, which vests immediately; for manager level employees, accrual of up to 25 days of vacation on an annual basis; stand-alone sick leave hours accumulation; and a subsidized post-retirement medical insurance plan for eligible employees.

EXEMPT STATUS: Full time, Exempt

GENERAL NATURE OF POSITION:

The Psychology Department at San Jose State University is involved in collaborative research efforts with civil service scientists from the U.S. Army Technology Development Directorate research group at the NASA Ames Research Center in Mountain View, CA. This research develops flight mechanics and control technologies for advanced manned and unmanned aircraft.

08/17/2020
We seek a Senior Research Associate to contribute to research on high fidelity physics-based flight mechanics modeling and simulation, with a particular emphasis on Future Vertical Lift (FVL) Future Attack Reconnaissance Aircraft (FARA) and Future Long Range Assault Aircraft (FLRAA). Models will be used for extensive research, analysis, and validation. In addition, we seek an Associate who has the ability to establish and lead an independent research program in the above areas.

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Develops and builds flight mechanics models of FARA Competitive Prototype (FARA CP) and generic FARA-like configurations.
2. Develops flight mechanics models and tools using TDD’s physics-based simulation code, HeliUM, a high fidelity blade-element model developed at the University of Maryland with Army support.
3. Validates manufacturer-specific claims on FARA CP configurations for flight dynamics, control laws, and handling qualities characteristics using CIFER (TDD’s frequency domain system identification tool) and CONDUIT (TDD’s control law design and analysis tool).
4. Validates and updates FLRAA relevant configuration flight mechanics models.
5. Develops and supports high fidelity models for desktop and piloted simulation.
6. Develops and supports model updates for advanced flight control modes (e.g. additional measurements such as tip clearance and power).
7. Able to effectively and efficiently work with other government agencies and industry (including national and international participants) in planning and conducting flight mechanics modeling and simulation research.
8. Prepares and presents technical briefings, papers, and reports for senior-level technologists, managers, and executives as well as for national and international meetings and conferences.
9. Other duties as assigned.

INTERPERSONAL CONTACTS:
1) Reports to the NASA Project Director.
2) Interacts with Foundation research staff and Army civil service staff on a daily basis.

SUPERVISORY RESPONSIBILITIES:
No formal responsibilities, though will be called upon for advice and direction by others.

QUALIFICATIONS:
1) Education and Experience
   • M.S. in Aerospace Engineering or related field is required. Ph.D. in Aerospace Engineering is desired.
   • At least two years of experience conducting research in the following areas is required: rotorcraft flight mechanics modeling; rotorcraft first principles / physics based modeling; rotorcraft simulation; Equivalent education can be substituted for experience.
   • Desired experience or education with classical control concepts (transfer functions, frequency responses, root locus); linear control theory – state-space methods;
• At least two years of experience with MATLAB is required. At least 1 year of Simulink experience is desired.
• At least two years of experience in applied research setting is highly desired.

2) Knowledge, Skills, Abilities Required

Required
a) Strong verbal, written, and presentation communication skills.
b) Ability to work both as a member of a team and independently, as required
c) General knowledge of flight mechanics, modeling, simulation, flight control, and rotorcraft.
d) Good understanding of the basics of physics based modeling, simulation, and flight testing.
e) Demonstrated ability to conduct independent research.
f) General knowledge of MATLAB programming language is required.

Desired:
a) General knowledge of FORTRAN programming language is desired.
b) General knowledge of Simulink programming language is desired.
c) Ability to work both as a member of a team and independently, as required.

3) Complexity of Duties
• Exercises independent judgment in the management and completion of a diverse set of tasks.

4) Physical Requirements
• The location is equipped for full accessibility.
• This is a local position on-site at Moffett Field and not a remote position.
• Must be willing to travel domestically and internationally, with up to 25% travel.
• Located at NASA Ames Research Center. Therefore, the employee must meet security qualifications for entrance to the Center, including an Agency background check.
• Employee must be a US citizen or Permanent Resident.

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 comprehensive benefit package includes:
a) Ten 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) 13 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 hours accruals and separate sick hours accumulations.
g) Employee Discounts
h) Paid Training and Conferences
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 applicant may do this via e-mail or by regular mail. The formal employment application is located at https://www.sjsu.edu/researchfoundation/docs/Employment-Application.pdf

It may also be obtained from the Research Foundation through its website at https://www.sjsu.edu/researchfoundation/employees/recruitment/index.php.

An applicant may also apply in person by visiting the Research Foundation, located at
210 North 4th Street, 3rd Floor,
San Jose, CA (corner of St. James and North 4th Streets)

Please address your formal application, your resume and your letter of interest directly to:
San Jose State University Research Foundation
Attn: HR/Job Code SRA FMM
210 North 4th Street
San Jose, CA 95112
E-mail: foundation-jobs@sjsu.edu

Reasonable Accommodation

The San José State Research Foundation 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. You may also call (408) 924-1400 from 8:00am to 5:00pm (PST), Monday through Friday, excluding holidays, to get assistance.

The Research Foundation provides excellent benefits package to benefited employees. Please visit https://www.sjsu.edu/researchfoundation/employees/benefits/index.php to get more details.

Research Foundation employment is separate and distinct from San Jose State University or State of California employment. Research Foundation employees are not employees of either SJSU or of the state of California.

The San Jose State University Research Foundation (SJSURF) is a non-profit auxiliary of San Jose 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.

SAN JOSE STATE UNIVERSITY RESEARCH FOUNDATION 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.

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.