Position: Research Associate (Aviation Development)

DEPARTMENT: Research will be done under a cooperative agreement between the Department of Psychology at San Jose State University and NASA Ames Research Center

IMMEDIATE SUPERVISOR: Project Director

POSTING DATE: February 28, 2018

CLOSING DATE: March 8, 2018

SALARY: Range: 77,500-80,500

EXEMPT STATUS: Exempt, Fulltime Benefited position

GENERAL NATURE OF POSITION:

The Psychology Department at San Jose State University is involved in collaborative research efforts with civil service scientists from the Aviation Development Directorate at the NASA Ames Research Center in Mountain View, CA.

The Aviation Development Directorate is looking for an exceptional Research Associate with a focus in the areas of flight dynamics, control, and autonomy. The ideal candidate has a combination of superb technical, research, and analytical capabilities. Experience and comfort is needed with building/checkout of modern UAS hardware, sensors, and controllers. The candidate must have a demonstrated ability to get things done quickly and effectively. This person must be comfortable working and collaborating with multiple members of a research team.

In this role you will design, implement, and test control system algorithms for fixed-wing and rotary UAS. In addition, you will perform frequency domain system identification to extract flight dynamic models from flight data of UAS vehicles. The ideal candidate will have fundamental knowledge of control systems design and analysis with some practical real-life implementation experience. An aerospace background is required. The right candidate will have had exposure to coursework in dynamics, control theory, robotics, and autonomous systems.

ESSENTIAL DUTIES & RESPONSIBILITIES:

a) Develop plans for system identification flight tests.
b) Support system identification flight tests.
c) Develop flight dynamic models via system identification in the frequency domain using CIFER.
d) Develop turbulence arena for use in gust rejection research.
e) Integrate current and rpm sensors into existing avionics package for fleet of UAS.
f) Integrate DGPS capabilities into existing avionics package for fleet of UAS.
g) Attended weekly group meetings and present research results.
h) Produce reports (whole or in part) and present work to relevant audiences.
INTERPERSONAL CONTACTS:
Reports to the Project Director. Interacts with US Army civil service and Foundation research associates on a daily basis.

QUALIFICATIONS

1) Education and Experience
   a) BS in Aerospace Engineering or related field required; MS is preferred (Or equivalent job experience in advanced related field).
   b) Required education in the following areas: aerospace flight dynamics and control; aircraft simulation; classical control (transfer functions, frequency responses, root locus); linear control theory -- state-space methods; robotics; autonomy.
   c) 2 years of experience associated with engineering functions related to development, test, or evaluation of avionic systems is required.
   d) 2 years of experience in integrating and testing control system algorithms for fixed wing or rotary UAS is required.
   e) 2 years of experience in applied research setting is highly desired.

2) Knowledge, Skills and Abilities required
   a) Strong verbal and written communication skills.
   b) Ability to work both collaboratively as a member of a team and independently as required.
   c) General knowledge of flight control, airspace operations, and fixed/rotary wing aircraft and UAS controls.
   d) Demonstrated ability to conduct independent research.
   e) Excellent understanding of experimental design and statistics.
   f) Good understanding of the basics of modeling, flight testing, and simulation environments.
   g) Required familiarity with: MATLAB, Simulink.
   h) Desired familiarity with: C, C++, ArduPilot, ArduCopter.

3) Physical requirements
   a) Must be willing to travel domestically and internationally.
   b) Located at the NASA Ames Research Center. Therefore, the employee must meet security qualifications for entrance to the Center, including an Agency background check.
   c) Employee must be a U.S. citizen or Permanent Resident.

4) Complexity of Duties
   a) Exercise independent judgment in the management and completion of a diverse set of tasks.

5) BENEFITS
The comprehensive benefit package includes:
   a) Ten health insurance plans to choose from
   b) Free dental and vision for employee and eligible dependents
   c) Paid Federal & State Holidays
   d) Retirement Plan: 403 (b) employee contribution plan component and a 403 (b) employer contribution component
   e) Vacation and separate sick plans
   f) Employee Discounts
   g) Paid Training and Conferences
SUPERVISORY RESPONSIBILITIES:
None, though may be called upon for advice and direction by others.

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 http://www.sjsu.edu/researchfoundation/open/Employment%20application%2010-18.pdf

It may also be obtained from the Research Foundation through its web site at http://www.sjsu.edu/researchfoundation/open/index.html.

An applicant may also apply in person by visiting the Research Foundation, located at 210 North 4th Street, 4th 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 NASA AV
210 North 4th Street
San Jose, CA 95112
E-mail: foundation-jobs@sjsu.edu

The Research Foundation provides excellent benefits package to benefited employees. Please visit http://www.sjsu.edu/researchfoundation/humanresources/healthbenefits/index.html 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.

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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.