Guidance, Navigation, Controls (GNC) Engineer – Job Description

This position will design and develop flight or mission-critical onboard software for unmanned aerial systems, industrial robotics. The ideal candidate will have experience in UAV Guidance, Navigation, & Control (GNC) utilizing vision, collision avoidance, systems, redundancy management and path planning architecture. The GNC Engineer will participate hands-on in the full software life cycle, from concept through implementation, integration to flight test.

Specific Duties

- Define, analyze and review software requirements to customer needs and system quality and performance standards
- Collaborate with other engineering disciplines (Systems, Software, Mechanical, Electrical) in planning, design and development of systems to ensure software and hardware performance and compatibility
- Simulation, analysis, control, and testing on 6 degree-of-freedom 6-DOF motion platform for development and validation of autonomous UAS.
- Design software architecture, interfaces, and gateways for communication with external Autonomy software services. Implement functionality using a model-based approach.
- Design and develop flight or mission-critical onboard software for unmanned systems
- Software verification and validation including writing Test Cases and Test Procedures
- Develop, implement, and document data and software application test plans to validate project deliverables meet quality standards
- Oversee and support processes and procedures for existing data and reporting activities to support internal and external customer deliverables. Examples of specific deliverables include but are not limited to: recurring reports and analyses; data validation and documentation
- Interface with hardware design and development
- Support oversight of suppliers who develop a subset of the embedded software or verification test cases and procedures
- Assess third party and open source software which potentially augments existing DPI flight control capabilities
- Typical software functionality for unmanned aerospace includes guidance, navigation & control, mission sequencing, payload control, redundancy and contingency management, uplink and downlink packet encoding and decoding, converting between different serial protocols, hardware-in-the-loop simulation, ground-based GUIs, and aircraft subsystem control (i.e., payload, electrical systems)

Qualifications

- BS degree in Mechanical, Electrical, Aerospace, Controls engineering
- Drive usage of tools: Gazibo, Matlab/Simulink, C, C++, FORTRAN or Python for cost efficient development and execution of program
- Experience in developing physics based 6 DOF simulations, motion platforms, preference helicopters

- Minimum four years of experience in a professional environment developing MATLAB / Simulink control systems with auto code experience; or MS in Controls or Aerospace Engineering plus 2 years' experience. Embedded code experience preferred.
- Ability to predict performance of helicopters through simulations
- Experience developing scripts to run batch processes
- Experience in data post processing from simulation runs and report writing
- Experience developing guidance and autonomy algorithms required; in denied environments preferred
- US Citizenship required

Minimum two years of demonstrated, hands-on professional experience in at least one, ideally a combination, of the following areas:

- Model-based design and/or test using the Simulink/Stateflow tool chain.
- Software development in a relevant subject matter area: Aircraft Guidance Navigation & Control or other robotic system guidance, navigation and control; ground- or airborne mission systems; general aerospace flight control or cockpit avionics systems; ground stations; payload control.
- Development/operations of hardware-in-the-loop simulators, conducting testing and troubleshooting of HW/SW interfaces.
- Modular Open System Architecture (MOSA) applied to complex aerospace or military systems (C2, payload data, etc.)
- Familiarity with software configuration management tools, version control systems, defect tracking tools, and peer review required
- Existing DoD Secret Clearance or be eligible to receive secret clearance.

Company Description

Dragonfly Pictures, Inc. (DPI), founded in 1992, is growing! We are a small R&D business transitioning into production. We have specialized in the design, fabrication and flight test of unmanned air vehicles and associated technologies. DPI leverages its unique skills and experience to develop ground-breaking technologies from concept through design, fabrication, qualification, and flight test. The company is dedicated to production of quality unmanned systems for the Dept. of Defense and commercial markets.

Address

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Industry

Aerospace and Defense, Manufacturing

Equal Opportunity Employer