Benjamin Henry Hwang

US Citizen | Active Top Secret/SCI Clearance
hwang.benjamin.h@gmail.com | 240-620-3119 | Fairfax, VA

WORK EXPERIENCE

Northrop Grumman **Dulles, VA / Roy, UT**

Systems Engineer *June 2023 – Present*

- Developed and tested mission-critical software for legacy Space-to-Ground communications network using C and Bash, implementing additional capabilities, robust testing, and updated documentation for current and legacy users
- Designed comprehensive test plan and procedure for emergency system hardware upgrade event, ensuring compliance against system-level requirements and minimizing service downtime during hardware transition
- Demonstrated successful integration of virtual machine-based architecture with current communications network in a sandbox environment, providing proof-of-concept and framework for future integration with operational network

Model-Based Systems Engineer *July 2021 – June 2023*

- Performed requirements development, analysis, and verification for Sentinel flight vehicle using DOORS, supporting maturation of hundreds of requirements across multiple subsystems throughout product development lifecycle
- Designed digital communications protocol between guidance and control (G&C) and payload subsystems, enabling compatibility with future payloads and earning additional scope of work from customer
- Authored Concept of Operations (ConOps) documentation for two advanced reentry vehicles, defining baseline expectations for each system in support of Independent Research and Development (IRAD) initiative
- Automated trajectory analysis plotting procedure using Python, reducing processing time by over 90%

Dynetics, Inc. **Huntsville, AL**

Flight Dynamics Engineer *June 2020 – June 2021*

- Performed modeling, simulation, and analysis (MS&A) for systems engineering and systems integration of Dynetics Human Landing System, contributing to NASA's Artemis Program initiative to establish sustainable lunar presence
- Developed 6-degree-of-freedom (6-DOF) simulation model using MATLAB and Simulink, supporting integrated verification and validation (IV&V) of spacecraft guidance, navigation, and control (GNC) subsystem
- Programmed trajectory analysis output plotting scripts in MATLAB and Python, providing comparison capability between three simulations and eliminating over 250 lines of redundant code
- Authored system performance analysis documentation deliverable to NASA, demonstrating performance requirements were satisfied and analysis inputs/environments definitions across system were consistent

Siemens Digital Industries Software **Livonia, MI**

Model-Based Systems Engineering (MBSE) Intern *May 2019 – September 2019*

- Demonstrated integration of Siemens NX and Amesim with Model-Based Systems Engineering (MBSE) approach to optimize design of Eclipse 500 jet fuel system, enhancing product marketability to aerospace and defense customers

Airspace Experience Technologies **Detroit, MI**

Guidance, Navigation, and Control (GNC) Engineering Intern *October 2017 – July 2018*

- Developed and tested flight control software using C++ and Mission Planner for autonomous electrical vertical takeoff and landing (eVTOL) passenger aircraft supporting Uber Elevate initiative

SKILLS

Software Development: Python, C++, Bash, MATLAB, Java, C, SQL, Excel VBA, HTML, CSS, JavaScript, Linux
Applications: DOORS, Cameo, Simulink, Amesim, Teamcenter, SolidWorks, Siemens NX, STAR-CCM+, OpenFOAM, Mission Planner, Jira, Confluence, Microsoft Office Suite, Windchill

EDUCATION

University of Michigan, College of Engineering **Ann Arbor, MI**

Bachelor of Science in Engineering in Aerospace Engineering, Minor in Computer Science *May 2020*

INTERESTS

College Football, Recreational Soccer, International Travel, Digital Photography, Videography, Wingspan