

John T. Stanfield

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EDUCATION

Georgia Institute of Technology, Atlanta, GA
Master of Computer Science - Computing Systems

August 2022 - December 2024

Auburn University, Auburn, AL

May 2021

Bachelor of Aerospace Engineering

Relevant Courses: Space Mission Design, Computational Numerical Analysis, Kalman Filtering

SKILLS

Languages: Python (Flask, Pandas, Threading), C++, JavaScript (React, Node), MATLAB, PowerShell

Technical: HIL Simulation, Software Automation, Software Tool Development, Technical Writing

Software Tools: Docker, VMware Workstation, Visual Studios Code, Simulink, Unity

Version Control: TortoiseSVN, GitHub/GitLab

Communication Protocols: UDP, TCP, ZeroMQ, ARINC 429, CanBus

EXPERIENCE

Booz Allen Hamilton, Remote - Savannah, GA

October 2022 – Present

Cyber Digital Twin Developer - Staff Technologist

- Assisted in the design and architecture of a Cyber-Physical Software Testing Platform leveraging digital twin and emulation technology
- Produced White Papers and CONOPs presentation on the architecture and development of the platform
- Provided technical insight for software integration and technology development in the field of emulation and simulation
- Developed a Python-based device to dynamically route ethernet-based communication protocols with commands from a Python Tkinter interface. Utilized sockets, multiprocessing, threading, Flask, and other networking Python modules to develop a lightweight controllable device

Gulfstream Aerospace, Savannah, GA

June 2021 – October 2022

Simulation and Software Engineer I

- Software support engineer for Hardware-in-Loop flight simulators on the G500 and G600 aircraft
- Utilized JavaScript (Node, React), SQL, & Python to develop an interactive web interface allowing a tester to select any international airport in the United States or position on Google Maps to inject coordinates into the simulation for GPS testing and relocation
- Developed and integrated a Python script with feedback control behavior into a relocation application used during testing. The script utilizes sensor data and normal forces to lower the aircraft to the runway, reducing the number of required updates to the visual systems' data files
- Utilized MATLAB to develop Simulink Blocks for decoding and encoding ARINC429 binary data
- Integrated and configured ARINC 429, 664, and 717 PCI cards into distributed computing systems
- Developed Tkinter GUIs utilized for failure injection, lab startup, and data visualization
- Utilized Selenium to automate the process of procuring data for Power Bi workflows. This development reduced the required preparation of weekly problem report reviews by approximately 45 minutes.
- Utilized WPF applications, PowerShell scripts, and batch scripting to automate manual operations in a lab environment

Chromalloy, Lagrange, GA

August 2019 – December 2019

Engineer Intern

- Utilized VBA scripting within Microsoft Excel macros to automate quality reports to increase part checkout efficiency
- Utilized microcontrollers, servos, and stepper motors to design and manufacture rotating tool fixtures. The fixture design has been scaled and manufactured across multiple company facilities countrywide.
- Executed capacity studies for the introduction of new turbine blade manufacturing projects by modeling the production volume and analyzing the manufacturing capabilities of the facility
- Collaborated with project managers on a project to develop and prototype tooling fixtures for propulsion engines using Siemens NX

Design Concepts, Sarasota, FL

May 2019 – August 2019

Engineer Intern

- Utilized VBA scripting within Microsoft Excel macros to automate spline point generation for the 3D modeling of marine components, reducing labor by an average of 2 hours per design.
- Led cost reduction project to improve work environment conditions and reduce cost, the implemented solution resulted in a reduction of cost by 8%, temperature by 10 degrees, and humidity by 5%
- Designed and fabricated Cessna 172 cockpit and avionics components for a flight simulator using Siemens NX and hand-laid fiberglass

PROJECT

Virtual Control Room for Aerospace Applications

December 2020 – May 2021

Backend Telemetry and Simulation Lead

- Created innovative risk assessment algorithm to process and scale telemetry and orbital simulation data to allow for advanced prediction of unhealthy satellites within a virtual reality environment
- Developed application programming interface (API) utilizing JavaScript and the Express framework for connection of the software's backend algorithm to the software user interface
- Developed software package capable of handling and parsing satellite communication data for 1300 satellites at 300 downlinks per satellite per hour. The data was stored and integrated with the VR interface using an Express backend framework and utilizing SQLserver to allow for continuous updating
- Created user interfaces in the Unity game engine using C# for multi-dimensional visualization of satellite telemetry data