Brehnden Daly
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Personal Mission Statement

Passionate engineer who seeks out and thrives in environments of technical challenges, knowledge-sharing, and collaboration.

Education

University of Central Florida *4000 Central Florida Blvd, Orlando, FL, 32816*
Degrees Received: **Bachelor's:** *Aerospace Engineering* **Minor:** *Mathematics*
GPA (Cumulative): *3.272* **GPA (Major):** *3.439* **Graduated:** *May, 2020*

Software

Languages: *Python, JavaScript, SQL, HTML, CSS, C/C++/C#, Visual Basic, …*
Packages: *Numpy, Numba, Cuda, Tensorflow, Scikit, React Flow, MUI, Express, …* **Frameworks:** *Node, React, Electron, Flask*
IDE/Technical SW: *Visual Studio Code, Anaconda, Autodesk Fusion 360, SolidWorks, Ansys, NX, LabView, MATLAB, …*

Hardware/OS

Micro Computing: *Raspberry Pi, Arduino* **Acceleration:** *Nvidia Cuda, Multiprocess*
Operating Systems: *Microsoft Windows, Red Hat Enterprise Linux, macOS, Ubuntu Linux, Raspbian Linux*

Employment

Software Engineer	*Northrop Grumman*	*10/22 – Pres.*	Currently developing software to support lab operations on a new program. This software is web-based and allows both test engineers and lab techs to provision lab hardware. Engineers use the web app to both build configurations of lab hardware, operating systems, and platform software as well as schedule test events consisting of said configurations. Given the necessary conditions are met, the software automatically provisions the lab hardware with the configuration-defined operating systems and software preparing it for official test events. ***Learned efficient agile software development in secure air-gapped networks/environments. Became SY0-601 certified (cybersecurity). Learned how to efficiently provision large lab environments consisting of a multitude of bare-metal servers.***
RAM Engineer	*Northrop Grumman*	*05/20 – 10/22*	Proposed and received approval for adding condition-based maintenance/prognostic capabilities to an advanced program's platform. This entailed performing various analyses on predecessor platforms' historical sensor data as well as subsystem hardware and software to identify low-complexity prognostic opportunities in the new platform. ***Learned how to improve subsystems with the goal of maximizing reliability, develop robust proposals, and preprocessing methods for historical data.***
Steam Turbine Engineer	*Mitsubishi Power Systems*	*10/19 – 5/20*	Furthered development and improvement of both steam turbine blade path optimization and turbine prognostic software. These pieces of software provided engineers an interface to calculate optimal cross-sectional blade positioning for high, intermediate, and low pressure turbines and analyzed sensor data to provide prognostic reports, respectively. ***Learned agile software development/improvement processes, how to develop organized bug reporting/tracking from the ground up, and how to quantify software improvements.***
Supplemental Instructor	*University of Central Florida*	*08/18 – 05/19*	Supplemental instructor for an introductory circuit theory course at the University of Central Florida. This was through UCF's Student Academic Resource Center. My job was to host study sessions to assist students in learning concepts such as Kirchoff's and Ohm's laws, DC/AC RL, RC, and RLC circuit analysis methods, etc. ***Learned how to lead meetings, simplify ideas, and stay organized.***

Projects

Quantitative/Automated Trading	Python-based project for automating the analysis of historical securities data and the creation, testing, selection, and deployment of trading strategies. Tick-level data is preprocessed and fed into a Cuda class with GPU-accelerated functions to analyze data. Rule-based entry/exit decisions are then generated, back-tested, and analyzed to ensure statistical consistency over time. The most promising strategies are then forward-tested with live data streamed from a broker. Adequate consistency between the back-test and forward-test results in automated deployment of the strategy.
Graph-Based Systems Engineering	Systems engineering application utilizing a React and Electron framework. This application stemmed from systems engineering coworkers' complaints regarding software they use to develop and analyze requirements. Complaints focused around a lack of an intuitive user interface and the inability to visualize relationships between requirements and system functions. This project aims to solve that by organizing the user interface and the data structure into a graph of nodes and edges.
Particle-in-Cell Electrostatic Simulation	Numerical iterative finite difference solver that simulates charged particles in an electrostatic and magnetic field.
Computational Fluid Dynamics	Numerical iterative finite difference solver of computational fluid dynamic differential field equations.

Patents

Stackable Drones	US9957045

Certifications

CompTIA Security+ (SY0-601)	Certifies an individual has the necessary skills and knowledge to assess the security posture of an enterprise environment and implement appropriate security solutions.