Conner Hughes
Robotics Software Engineer

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I am passionate about AI, ML, data analytics, robotics, and automation technologies.
Experienced with Robotics, Automation, Computer Science, and Mechatronics.

PROJECTS

- Personal: Built a selenium based web scraper to create and update card collections with current market information
- Thesis: Developed a high speed communication system for teleoperation of robotic manipulators
- Research: Designed architecture for a lightweight, real-time, sound localization microphone array on an aerial drone
- Mechanical Capstone: Owned the software and electrical development of 'Opportunity,' the animatronic eagle
- Electrical Capstone: Programmed and manufactured a device to track ankle joint stiffness of diabetic patients

SKILLS

Programming Languages
   C • C++ • Python • Bash • Assembly • MATLAB • Simulink • G&M Code • Java • HTML • CSS • XML • PHP
   MySQL • BASIC • Studio 5000 • Factorytalk View Studio • IndraWorks • IndraWorks Engineering

Software
   Linux • R.O.S. • GitHub • Perforce • Jira • VS Code • PuTTY • MobaXterm • GCC • Anaconda • Jupyter • NumPy
   Pandas • SciPy • Matplotlib • Selenium • EasyEDA • NI Multisim • FreeCAD • SOLIDWORKS • HSMWorks • AutoCAD
   ANSYS • Mach3 CNC • MS Office Suite • Visio

Hardware
   Arduino • RaspberryPi • BeagleBone Black • Oscilloscope • Multimeter • Logic Analyzers • Power Supplies • DAQs
   GPIO • PRUs • USB • UART • SPI • I2C • Servo • DC Motors • Stepper • PWM • VFDs • Lidar • Sonar • Bluetooth

Technical
   Board Layout • SMD Soldering • Hot Air Rework • Manual and CNC operation • 3D Printing • Laser Cutting • MIG
   OA Welding • Sand Casting • Power, Air, and Hydraulic tools

Techniques
   PID • Deadband • Bode and Nyquist Plots • Poles, Zeros, and State Estimation • Root Locus • Inverse Kinematics

WORK EXPERIENCE

Viasat   **1725 Breckinridge Plaza, Duluth, GA 30096**
Servo Controls Engineer   Nov 2021 - Jul 2022
- Real time motion control software development (coding, testing, debugging) in an Agile environment
- Design, install, tune, test, and troubleshoot antenna servo control systems
- Estimate and prove servo performance (velocity and acceleration dynamics, bandwidths, step response)
- Rapid prototyping, create new antenna control unit functions and features, and documentation
- New design labor estimation, component selection, and cost determination

Vanderlande Industries   **1975 W Oak Cir, Marietta, GA 30062**
Controls Project Engineer   Jan 2021 - Nov 2021
- Write, debug, and test PLC and HMI code and create detailed design documents for Controls Architecture
- Commission materials handling systems and troubleshoot mechanical, electrical, and controls issues

Georgia Southern University   **1332 Southern Drive, Statesboro, GA 30458**
Graduate Teaching Assistant   Aug 2017 - May 2019
- Optimize animatronic capstone's microcontroller routine, expand functionality, model and 3D print new assemblies
- Provide support to and direction of students in mechatronic, manufacturing, and programming classes and labs

Georgia Southern University   **1332 Southern Drive, Statesboro, GA 30458**
Graduate Research Assistant   Jan 2017 - May 2017
- Research lightweight, low-cost, real-time, sound localization microphone arrays utilizing parallelization of FFTs in
   mobile GPUs for autonomous drones in disaster situations
- Develop and manufacture prototype PCBAs for low-cost, asynchronous, analog to digital omnidirectional
   microphones for use with the BeagleBone Black
- Developed solid models for microphone array implementations and propeller safety shielding

EDUCATION

Georgia Southern University   **Statesboro, Georgia**
Master of Science, Applied Engineering, Mechatronics   Summer, 2020
Georgia Southern University   **Statesboro, Georgia**
Bachelor of Science, Mechanical Engineering,   Fall, 2016
   Minor in Mathematics