Jonathan Bayless

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A well-rounded software developer focusing on embedded software and robotics with a background in electronics and controls systems.

Employment

Carrier Corporation
Graduate Hire Program - Firmware Developer *May 2019–Present*

– Rewrote Task Management C Code Generator in Python and C# to reduce generation time from 15 **minutes** to 15 **seconds**

The Boeing Company
F15 Mission Processing Software Infrastructure Intern *May 2018–August 2018*

– Added support for new systems and communication protocols to improve coverage of existing logging systems
– Revamped RTOS frame analysis tool to aid in threading use and prevent mission-affecting overframing
– Rewrote Ada parser for flight test messages in Python to support new message spec and cut technical debt
– Fixed bugs in build scripts and test environments

Rolls-Royce Corporation
Electrical Test Engineering Intern *May 2017–August 2017*

– Designed and implemented new controls algorithm that improves performance over PID; patent currently pending
– Created VBA tool for parsing .ini config files into Excel sheet that became standard for collaboration with mechanical teams
– Led a team of 12 engineering interns in updating facility database

Rolls-Royce Corporation
Electrical Test Engineering Intern *May 2016–August 2016*

– Built PLC hardware and validated PLC programming for engine test stands
– Validated signal configuration for European test stands in QNX based HMI software
– Upgraded computer hardware and created Ethernet-linked satellite HMI station for air facility control

Education

Purdue University **Graduated May 2019**
Bachelor of Science in Electrical Engineering, Minor in Organizational Leadership

Ancillary Projects

Purdue ACM SIGBots
President, Vice President *April 2016–April 2018, April 2018–April 2019*

– Designed mechanical systems, sensor integration, and controls systems development for semi-autonomous robots
– Placed 1st in World Competition Rankings and 4th in the World Programming Skills
– Increased users of team's RTOS/Dev Environment from 200 to 2000+ as kernel developer and UI/API designer
– Developed a variety of Kalman Filters, PID controls, path planning, and odometry for mobile robots

Association for Computing Machinery
President *April 2018–April 2019*

– Coordinated team meetings and events, handled team finances and maintained relationships with sponsors
– Led four Special Interest Groups (SIGs) in areas of App Development, AI, Robotics, and Game Development

Technical Skills

Programming Languages (Proficient): C, C++, Python, MATLAB, Dart

Programming Languages (Knowledgeable): C#, Ada, Arm Assembly, (S)CSS, Javascript(NodeJS), Kotlin, SQL

Programming Skills: QNX/Unix/Linux environments, Git, ClearCase/ClearQuest, DOORS, CircleCI, IBM Jazz Suite, GDB

Other Software Skills: LTSpice/NGSpice, KiCad, CATIA, Autodesk Inventor/Fusion, Adobe Illustrator

Controls Skills: Kalman filtering (EKF/UKF), PID, Non-linear control, AI autotuning for PID, Pure Pursuit, Spline path planning

Other: Soldering, MIG welding, plasma cutting, 3D printing, Wood shop equipment, CNC