

Jonathan Bayless

✉ me@jonathanbayless.com • 🌐 <https://jonathanbayless.com>

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 30 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

Bachelor of Science in Electrical Engineering, Minor in Organizational Leadership

Graduated May 2019

Leadership Experience

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
- Grew the organization from 6 members to 40 members 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 Unscented Kalman Filter, 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: C, C++, C#, Python, Ada, Arm Assembly, MATLAB, VBA, CSS (Sass/SCSS), Javascript, NodeJS

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