

Phill Kelner

Systems Integration and Test Automation Engineer

Education

Rochester Institute of Technology

// Rochester, NY
Electrical Engineering B.S.
Computer Engineering Option
Graduated May 2018
GPA: 3.07/4.00

Objective

To obtain a challenging full-time position that combines my skills with hardware and software, with the opportunity to expand my field of expertise and provide meaningful contribution to the advancement of new technology.

Technology

// Platforms
Windows | Ubuntu | Linux | AWS
MATLAB | Docker
// Languages
Python | C | C# | Java
Assembly | Bash | JavaScript
// Architectures
Cortex-{M0 | M0+ | M3 | M4} | AVR
// Drawing Tools
PTC Creo | Microsoft Visio
// Hardware Design Tools
Eagle | LTSpice | Cadence | Altium
// Software Version Control
Git | SVN | Dimensions
// Continuous Integration
Jenkins | AWS CodeBuild

Skills

Software System Level Design
Interdisciplinary Communication
Project and Team Management
Wiring Harness Manufacturing
Schematic Drawing and Design
Microcontroller Programming
Fast Prototyping
CAN Bus interaction and Testing
Customer & Vendor Interaction
Regression Testing

Hobby Work

Wrote Verilog code to create a 12-bit processor with basic assembly instructions
Developed battery powered remote device reporting plant moisture using an ESP32.
Utilizing Home Assistant to build out a cloud-less Home automation system

Experience

Amazon | Project Kuiper // June 2021 - Present

Hardware Engineer (2021-2022) | Software Development Engineer (2023-Present)

Spearheaded software development to control Electrical Ground Support Equipment rack for Amazon Kuiper satellites in preparation for testing and launch site operations. Wrote test hardware drivers for internal test automation framework.

// Key Achievements

- » Acquired requirements, architected, implemented, and delivered software to control the EGSE rack supporting flatsat testing and will support factory and launch operations.
- » Provided software support during integration and mission rehearsal test campaigns for prototype satellites, directed failure investigations when issues occurred with telemetry streaming to cloud-based data stores.
- » Shouldered systems administration responsibilities for the EGSE racks, implementing LDAP-based authentication scheme ensuring users only had access to hosts to which they were explicitly permitted.
- » Wrote FSW update and provisioning libraries supporting mission assurance testing.

LeoStella | Flight Software // June 2019 - May 2021

Contract Engineer (2019-2020) | Avionics Test Engineer (2020-2021)

Tested and validated new Flight Software features and flight operations. Verified new software met customer requirements via integration testing across virtualized and physical test beds. Administered continuous integration/testing pipelines.

// Key Achievements

- » Stood up an automated software integration pipeline to execute tests nightly, identifying software regressions. Developed Docker-based testing pipelines for continuous testing.
- » Worked with production engineers to vend test libraries, unifying test software for flight software and vehicle integration and test.

SpaceX | Avionics // May 2016 - Dec 2016, Aug 2018 - Dec 2018

Systems Integration & Firmware Intern, Starlink Test Associate Engineer

Designed ground support, test, and production equipment for the Dragon 2 vehicle before writing code to automate installation of firmware on devices for production. Completed build of Hardware-in-Loop (HIL/HITL) fixtures for Starlink.

// Key Achievements

- » Built the first Dragon 2 Support Rack, modified design to simpler production and usage.
- » Created modular system test device on an Intel NUC computer with NI DAQ hardware. Wrote python scripts to use the system to automate the process of bare-metal bringup.
- » Supported component selection for production line Satellite RF test racks.
- » Completed build design and notes for Hardware-in-the-Loop fixtures for Starlink.

Formula SAE Racing Team // Aug 2013 - July 2018

Project Manager (2017-2018) | Electrical Engineer (2014-2017)

Managed team's finances, design timelines, 50+ people building two cars. Designed and manufactured electronics and wrote software for race car dashboards and sensors.

// Key Achievements

- » Implemented full hardware and software stacks for Raspberry Pi dashboard.
- » Developed team's first ever Electric Cars, with two other electrical engineers.
- » Drew schematics and layouts for custom PCB for an embedded Dashboard.
- » Incorporated a DAQ to log vehicle body sensors and interface with the ECU via CAN.