

Ryan Kelly

SOFTWARE ENGINEER · EMBEDDED

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Work Experience

Philips Respireonics

Pittsburgh, Pennsylvania

SR. SOFTWARE ENGINEER

March 2022 - Present

- [Trilogy Evo/EV300](#)
 - Created a custom layer and set of recipes to facilitate a migration to a Yocto based custom Linux distribution.
 - Led a team of 5 members to release software in accordance with ISO 62304 for a class C ventilator.
 - Refactored cryptographic library to leverage dependency injection to increase testability and reduce coupling.
 - Facilitated and hosted agile ceremonies.

Philips Respireonics

Pittsburgh, Pennsylvania

SOFTWARE ENGINEER

August 2017 - March 2022

- [Trilogy Evo/EV300](#)
 - Worked alongside a group of 10 team members to develop, test, and deploy software for a multi-processor class C ventilator.
 - Created a serial data passthrough mechanism to simultaneously support proprietary communication and a CO2 monitor.
 - Designed and implemented an authentication mechanism for proprietary serial communication.
 - Integrated third-party touchscreen driver in custom Linux BSP.
 - Implemented PNG-based screenshot mechanism to support automated testing.
 - Designed cryptographic hardware wrapper mechanism and derived cryptographic workflows.
 - Maintained CI/CD job configurations and adopted Coverity static code analysis.
 - Designed an authenticated and encrypted software upgrade scheme using the ECDSA and AES algorithms.
 - Automated eMMC image creation with Bash script for quick functional circuit test turnaround.
- [Next Gen Simply Go](#)
 - Collaborated with third-party vendor to create a cryptographic hardware provisioning scheme.
 - Documented and designed cryptographic workflows using security hardware.
- Manufacturing Support Camera Capture Project
 - Designed cryptographic signing mechanism using a certificate chain of trust and ECDSA.
 - Explored and implemented IoC paradigms using a dependency injection container.
 - Leveraged DirectShow to interface with the settings and video stream of a document scanner.
 - Added functionality to interact with an SQLite database to support local information caching.
- DevOps Initiative
 - Installed and configured Artifactory on an AWS EC2 instance using an S3 container for artifact storage.
 - Coordinated with internal customers to resolve issues surrounding several supported server platforms.

Skills

Programming	C/C++, C#, Bash, Python
Desktop	WiX Toolset, Avalonia
Build Tools	GCC, NuGet, make, Visual Studio, .NET, IAR, VS Code, BitBake
CI/CD	TeamCity, Jenkins, GitLab, Artifactory, Jenkins, Coverity
Source Control	Git, SVN
Planning Tools	Jira, Confluence, IBM Doors, HP ALM
Libraries	OpenSSL, Mbed TLS, Bouncy Castle, libarchive, libpng, CryptoAuthLib

Education

The Pennsylvania State University

Erie, Pennsylvania

B.S. IN COMPUTER ENGINEERING

Aug. 2014 - May. 2017

- Dean's List - Fall 2015, Fall 2016, Spring 2017
- GPA: 3.42

Butler County Community College

Butler, Pennsylvania

ENGINEERING

Aug. 2013 - May. 2014

- Present's Scholarship - Fall 2013, Spring 2014
- Dean's List - Fall 2013
- GPA: 3.46