

Daniel E. Ripka

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Education

Bachelor of Science in Computer Engineering
University of Wisconsin - Milwaukee, May 2023

Skills

- Programming: C, C++, Python, Java, Scala, HTML, CSS
- Tools: Git, SVN, Bash, Powershell, LTspice, Oscilloscope, Picoscope
- Development Environments: Visual Studio Code, PyCharm, IntelliJ, Microchip Studio
- Frameworks/Libraries: Pandas, Matplotlib, Numpy, Scikit-Learn, Django, FreeRTOS, CppUTest, JUnit, SDL2
- Systems: Windows 11, Ubuntu, VirtualBox, WSL, PC hardware repair/upgrades
- Productivity: Scrum, Microsoft Office, LibreOffice

Experience

Badger Meter - Brown Deer, WI

Firmware Engineer, since June 2023

- Designed, developed, and maintained firmware for Orion Cellular Endpoints using C/C++.
- Created hardware abstraction layers and device drivers to interface with peripherals.
- Implemented SPI and UART communication protocols for efficient data transfer between hardware and software layers.
- Designed and developed FreeRTOS task scheduling algorithms to report data on time and optimize real-time task execution and resource management.
- Engineered an interrupt-driven UART protocol for Orion Cellular Endpoints to communicate with Badger Meter smart meters over a 3-wire interface, significantly enhancing speed, power efficiency, and enabling an expandable design.
- Wrote and executed CppUTest unit tests to validate firmware updates and prove reliability.
- Developed Python scripts to automate firmware testing and configuration tasks.
- Developed Python scripts to download AWS data, clean and parse it, and visualize field device performance using Pandas and Matplotlib.
- Conducted electronics environmental testing, including battery current and power consumption measurements.

Columbus McKinnon Corporation, Magnetek - Menomonee Falls, WI

Associate Engineer, from July 2021 to June 2023

- Developed a PyQt desktop app to automate testing and monitor variable frequency drive parameters over Modbus serial protocol, enhancing firmware testing efficiency.
- Designed firmware to control overhead crane slowdown behavior triggered by a limit switch, maximizing operating space while maintaining safety, and integrated laser device support.
- Created firmware to simulate crane load dynamics on a hoist using motor control.
- Designed, developed, and implemented firmware validation tests.
- Migrated data and validated specifications for a new AC crane drive in development.

Amazon Fulfillment Center - Oak Creek, WI

Packer, from May 2021 to July 2021

- Packed 60+ packages per hour, ensuring secure packaging to prevent shipping damage.
- Supported team by maintaining packing station resources and assisting colleagues.

University of Wisconsin - Milwaukee, Campus Technology Support - Milwaukee, WI

Desktop Support Technician, from September 2019 - March 2020, September 2020 - May 2021

- Provided technical support for Windows and Mac OS systems, resolving hardware/software issues.
- Configured and deployed desktops, laptops, and accessories, including imaging and setup.
- Managed incident tickets, client communications, and asset tracking using management software.
- Granted software and network access permissions as requested by users.

Greendale Lions Club - Greendale, WI

Volunteer, since July 2021

Assembled wireless technology, networking, and payment systems for seasonal events.