Hannah Lindqvist

Embedded Software Engineer

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SUMMARY

Embedded software engineer with 4 years of experience writing C and C++ firmware for medical and industrial devices on ARM microcontrollers. Brings up SPI, I2C, UART and CAN drivers and debugs at the board level with oscilloscopes and logic analyzers. Writes Python test tools that keep firmware releases safe on production hardware.

EDUCATION

Bachelor of Science 05/2022

University of Minnesota Minneapolis, MN

Electrical Engineering

EXPERIENCE

Embedded Software Engineer 03/2024 - Present

Northstar Infusion Devices Minneapolis, MN

Maker of infusion pumps and bedside patient monitors.

- Wrote FreeRTOS tasks and C drivers for an infusion pump motor controller on an ARM Cortex-M4.
- Debugged SPI and I2C timing faults with oscilloscopes and logic analyzers, removing a 1-in-500 sensor dropout.
- Built a Python hardware-in-the-loop rig that runs **1,200** firmware tests on every Git commit.
- Documented firmware design for FDA submission files and walked QA and hardware engineers through each change.

Associate Firmware Engineer 06/2022 - 02/2024

Iron Range Controls Duluth, MN

Industrial motor drives and PLC accessories.

- Developed CAN and UART communication stacks in C for motor drives shipped to 300 plant sites.
- Ported a data logger from bare metal to embedded Linux, adding Ethernet and USB file export.
- Reduced boot time from 3.2s to 0.9s by reordering peripheral setup and trimming the bootloader.
- Reproduced field failures on the bench and shipped three firmware patches that ended a run of warranty returns.

Engineering Co-op 05/2021 - 12/2021

Lakeland Sensor Technologies St. Paul, MN

Pressure and flow sensors for HVAC systems.

- Programmed C++ calibration routines for a pressure sensor line producing 20,000 units a month.
- Automated end-of-line tests in Python, cutting test time per board from 90 to 35 seconds.
- Logged calibration drift data that helped hardware engineers choose a more stable sensor supplier.

SKILLS

C • C++ • Python • RTOS • SPI • I2C • UART • CAN • Embedded Linux • Oscilloscopes