JEREMY PHY

3A Mechatronics Engineering at University of Waterloo

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LANGUAGES



UART

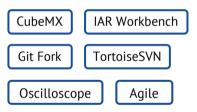
PROTOCOLS

SPI

Bluetooth LE

TOOLS

I2C



SKILLS

Embedded Development

Signal Analysis

Firmware Debugging

INTERESTS

Video Production

Skateboarding

Formula 1

EXPERIENCE

- **Software Developer** Siemens Healthineers Inc.
- Programmed camera module using STM HAL libraries (DCMI, DMA) for capture and decoding of 2D-barcode image
- Created inter-core signal system with semaphore IRQ for asynchronous operation on dual-core STM processor (32-bit)
- Updated Bluetooth firmware using proper module configs (Microchip BM78) for Low-Energy User-Confirm Pairing
- Debugged control board firmware to assist hardware team's prototype development

Embedded Software Developer PerkinElmer, Inc. Jan - Apr 2021

- Implemented RS485-to-SPI transceiver in C++, for communication between existing hardware and new motor control system
- Installed evaluation hardware for MCU (ATMega328) and transceiver (MAX485) on a mass spectrometer for successful concept validation
- Collaborate with Sr. electrical designer to produce circuit schematics for production

Embedded Software Developer PerkinElmer, Inc. May - Aug 2020

- Developed 3-axis motion control system using PowerSTEP01 controller for accurate calibration of mass spectrometers sample injector
- Programmed SPI transfer framework with C, allowing for X/Y/Z/Pump motor control with single daisy-chained connector
- Integrated motor controllers into an existing hardware system, saving up to \$500/unit in production costs

PROJECTS

Project Cerberus A prototype 3-wheeled robot

Winter 2021

Sep - Dec 2021

- Designed triangle-style chassis to support 3 omni-directional wheels
- Programmed control software with Arduino for obstacle detection and navigation

Personal Website Jeremyphy.github.io/

Winter 2020

- Created site layout using HTML and CSS for an intuitive user experience
- Implemented Bootstrap 4 framework for accessible viewing on desktop and mobile devices

EDUCATION

Candidate for BASc Mechatronics Engineering	2019-2024
University of Waterloo	(expected)
Talented Offerings for Programs in the Sciences (TOPS)	2015-2019

Talented Offerings for Programs in the Sciences (TOPS)2015-2019Marc Garneau C.I.2015-2019

Winter 2020