

Caleb Bornman

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Experience

Embedded Software Engineer II - CNH Industrial

March 2021 - Current

- Develops initial features for combines in C and with model-based design (Matlab Simulink)
- Supports system testing of software on machine (CAN, LIN) and with simulation environment (C#)
- Cross functional team working in USA, Belgium, Brazil, and India
- Versioning control experience with SVN and Git. Polarion ticketing and sprint system

Electrical Design Engineer - Exelon

Peach Bottom Atomic Power Station, October 2019 - March 2021

- Prepared Instrumentation & Control designs for temperature/flow switches, radiation monitors
- Cable failure analysis for plant system impacts due to heat degradation of cable insulation
- EMI/RFI analysis for portable wireless devices and system modifications, utilizing MIL standards

Controls Engineer - Multi Dimensional Integration

April 2019 – September 2019

- Commissioned conveyor and PLC machinery – electrical troubleshooting, field testing, A-B ladder logic
- Home products manufacturing line - Mitsubishi automation software, hypersonic seal timing code

Projects

[SetCrops Lightroom Plugin](#) - Trained PyTorch convolutional neural network to crop film slides

[Film Development Water Bath Heater](#) - SSR to control heating coil with thermocouple feedback

[Audiobook File Downloader](#) - BeautifulSoup Python web scraping script from free online resources

[Automated Slide Digitizer](#) - Retrofitted old slide projector with a camera mount (ESP32 for timing control)

Linux Retro Game Console - Convert old laptop to retro game console

Solar PV Collaboratory Project - Installed a six-kilowatt solar photo-voltaic system for the Ekuphileni Bible Institute in Zimbabwe. Site Team Leader in charge of travel logistics and team well-being.

Diagnostics for Viral Diseases Project - Developed a low-cost single-photon correlation detector for measuring HIV-1 viral load. Interdisciplinary team with personnel in biochemistry, physics, bio-med engineering, computer science. Validated original surface mount PCB prototype.

Stanley, Black & Decker Intern - DeWalt self-propelling lawn mower prototype (Arduino for control and UI). Datalogger v.3: Redesigned a robust and cost-efficient data logger for outdoor equipment testing

Education

Messiah University

Bachelor of Science in Engineering (Honors Program)

- Electrical and Computer Concentrations
- Graduated May 2019 | Cumulative GPA: 3.71/4.00
- Self-financed education through academic scholarships and work

Leadership

World Economic Forum Global Shapers Lancaster Hub Member/Vice-Curator - *July 2023 - Ongoing*

The Common Wheel Nonprofit Board Member/Secretary/Vice President - *September 2022 - Ongoing*

Collaboratory for Strategic Partnerships Student Board Member - *August 2016 - May 2018*

Messiah College Residence Life Senior Residential Assistant - *August 2016 - May 2018*