Reginald Marr

Embedded Software Designer

"Everything is mutable"

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Experience

Embedded Software Designer - New Product Integration

L3Harris-Wescam

Jan 2020 – Present | Hamilton, Ontario

- Received the 2023 EO Engineering and Technology Award as software lead for the development of the WCLIR project (a best in-class product with performance 3x the incumbant).
- Collaborated with cross-functional engineering teams to refine lens and laser sub-assemblies (as product lead).
- Lead the development of data distribution pipelines, abstracting I2C, SPI, UART, and Xilinx AXIS Stream data for higher-level usage.
- Designed a common driver framework, providing modular device orchestration for multiple projects.
- Developed a Python/Rust framework for automated testing and analysis of embedded systems.
- Provided data analytics support for in-field flight tests.

Embedded Software Designer - Sustaining

L3Harris-Wescam

May 2018 – Dec 2019 | Hamilton, Ontario

- Triaged bugs found during pre-shipment verification.
- Acted as liaison to solve customer delivery logistics.
- Developed automation tooling to optimize workflows.
- Created documentation and improvement proposals for legacy software.
- Streamlined conversion of text-based documentation to PDF, Powerpoint, and website formats.
- Utilized TDD best practices to develop bug fixes and improvements to legacy software.

Tech Assistant (Co-Op)

McMaster University - The Learning Factory

May 2017 – Aug 2017 | Hamilton, Ontario

- Proposed improvements based on best-in-industry practices.
- Provided estimation support for various full-scale systems.
- Designed and installed DCS system integration, hardware, and HMI.
- Developed RFID system for part/tool tracking, using C, C#, and MySQL.

Project Coordinator (Co-Op)

Airtron Canada

Feb 2016 – Aug 2016 | Missisauga, Ontario

- Developed Linux-based relay for environmental variable logging.
- Assisted in creating proposal for biogas cogen conversion.
- Provided estimation support for GHG offset contracts.
- Served as liaison to clients, summarizing project proposals and facilitating on-site data collection activities.

About Me

With a career steeped in technological innovation, I've learned the intricacies of project success and potential pitfalls. I pride myself on collaborating with diverse teams, creating something greater the sum of our individual contributions.
An analytical thinker, I deconstruct complex problems to their core components, crafting solutions that are both robust and adaptable. This mindset has been pivotal in my professional projects and hobbies.
As I forge ahead in my career, my goal is to leverage these skills to further drive technological innovation.

Education

B.Tech - Automation Engineering Technology

McMaster University/Mohawk College

Sept 2013-Dec 2018 | Hamilton, Ontario

Focused on automated systems, advanced control, robotics, and computer programming.

- Capstone: Developed a cross-platform G-Code Generator application (Qt & C++) for a novel 3D metal printing process.
- Graduate-Level Project: Designed a neural network-controlled industrial system for ethanol distillation. Project typically reserved for master's students.
- Adv.Dip - Chemical Engineering Technology: Comprehensive knowledge of chemical process design, control, and optimization.
- Certificate - Business Management: Studied core management and leadership principles, including financial management and marketing.
- Co-Op Experience: 16 months of practical work.

Skills

- **Programming Languages:** Proficient in C/C++, Rust, and Python. Familiar with SQL, MATLAB, and lisp.
- **Development Tools:** Experienced with Git, Docker, Jenkins, Jira, and Ansible for continuous integration, version control, and project management.
- **Operating Systems:** Comfortable working with Linux and real-time operating systems such as ThreadX and FreeRTOS.
- **Frameworks:** Knowledgeable in leveraging POSIX, ROS, and Xilinx based frameworks for efficient robotics software development.
- **Protocols:** Experienced with I2C, UART, SPI, DDS, Xinix's AXI Stream, and application-specific protocols for sensor and actuator integration.
- **Sensor Fusion and Localization:** Proficient in incorporating/fusing data from lidars, cameras, and IMUs.