Reginald Marr

Embedded Software Designer

"Everything is mutable"

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About Me

With a career steeped in technological innovation, I've learned the intricacies of project success and 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. Included 16 months Co-op experience.

- Capstone: Developed a novel 3D metal printing process and associated G-Code Generator application.
- 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, financial management, and marketing.

Experience

Embedded Software Designer - Sustaining

L3Harris-Wescam

May 2018 – Dec 2019 | Hamilton, Ontario

- Triaged bugs found during pre-shipment verification in C/C++ codebase.
- Utilized Jira, Git, Jenkins, and Ansible to work track issues, patch software, test code in reproducible environments.
- Acted as liaison to solve customer delivery logistics.
- Developed automation tooling to optimize workflows.
- Created documentation and improvement proposals for legacy software running VxWorks and ThreadX.
- 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.
- Provided data analytics support for in-field flight tests using Python and Matlab.

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 best in class LIDAR development.
- 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, CAN, Ethernet and Xilinx AXIS Stream data for higher-level usage (leveraging DDS).
- Designed a common driver framework, providing modular device orchestration for multiple projects (using C/C++).
- Developed a Python/Rust framework for automated testing and analysis of embedded systems
- Applied Kalman filter based sensor fusion for highly performant stabilization systems.
- Developed OS agnostic software with support for Linux, and RTOS's such as VxWorks, ThreadX, and FreeRTOS.

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.

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 using ROS, Linux and various RTOS's.
- Designed and installed DCS system integration, hardware, and HMI using Qt's gui framework.
- Developed RFID system for part/tool tracking, using C, C#, and MySQL.