Miguel Manguerra

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- ⚲ Victoria, Canada

👤 Profile

A fifth year computer engineering student expected to graduate in August 2023 with extensive electronics product development experience. In his most recent co-op with Starfish Medical, he was exposed to the rigorous product development process necessary in medical applications. By leading a team at Ergonomyx technologies: he developed an IoT office equipment product. Currently, he is working with Salyx Medical to develop their IoT vitals tracker that monitor the health factors of a user.

🎓 Education

University of Victoria,
Fifth Year Bachelor of Engineering (Computer Engineering)
Sep 2018 – Aug 2023 | Victoria, Canada

🧠 Relevant Skills

- Highly advanced experience in designing Printed Circuit Boards in Altium and KiCAD.
- Accomplished at drawing, understanding, and organizing complex electrical schematics.
- Adept in soldering and troubleshooting electronics with a variety of testing and measurement equipment.
- Rapid problem-solving skills that involve quick thinking, smart research skills, and flexibility to any situation.
- Procured a wide variety of components and PCBs from Digikey, Mouser, JLCPCB and, PCBWay.
- Developed custom firmware for STM32F0 and ESP32 microcontrollers using Eclipse and PlatformIO.
- Proficient in C, C++, CAPL, MATLAB, and Python.
- Extensive experience modelling challenging circuits with LTspice and other SPICE simulators.
- Intermediate experience modelling prototype designs in Solidworks, NX, and Fusion 360.
- An expert at manufacturing products with 3D printing.
- Developed documentation in accordance with the requirements of ISO 13485 and IEC 60601.

💼 Professional Experience

Electronics Engineer, *Salyx Medical* 🔗
May 2023 – present | Victoria, Canada

- Performing verification testing on an innovative IoT medical device that tracks a user's health vitals.
- Developing a USB-C charging PCB that allows users to safely charge the embedded Lithium Ion battery within each vitals tracker.

Electrical Engineering Co-op, *Starfish Medical* 🔗
Sep 2022 – Dec 2022 | Victoria, Canada

- Designed and built custom PCBs for a variety of medical devices.
- Analyzed analog and digital circuits using electronics lab equipment.
- Performed experiments to determine the most optimal path forward to developing a reliable and safe medical device.

Electronic Prototype Engineering Co-op,
Ergonomyx Technologies 🔗
Sep 2020 – Aug 2021 | Victoria, Canada

- Led a team of four to develop and prototype a universal smart desk controller that can control any type of existing motorized sit stand desk.
- Designed a USB-A charging PCB that could charge a smart phone or an iPad from the power generated by a user's pedaling.

Product Designer - Software Co-op,
Dometic (formerly SeaStar Solutions) 🔗
Jan 2020 – Apr 2020 | Vancouver, Canada

- Performed system level testing on electronic systems with complex CAN networks.
- Analyzed data recorded on CAN buses using Vector's CANalyzer.

🏠 Community Involvement

University of Victoria Environmental Engineering Club, *Electrical Team Lead* 🔗
Sep 2021 – Sep 2022 | Victoria, Canada

- Designed a Smart Power Board that monitors and controls four different power lines.
- Led the design of the USV's plethora of electronics, including the Central Controller Board, and its custom built battery pack.

🔧 Projects

Some of Miguel's current projects include a force sensing robotic manipulator arm and an open source programmable DC electronic load. For more information about his projects visit his project portfolio 🔗