Miguel Manguerra

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⚑ https://migoymanguerra.wixsite.com/portfolio

📇 Profile

A fourth-year computer engineering student with extensive electronics product development experience. By leading a team at Ergonomyx technologies, he developed a soon to be released IoT office equipment product. Recently, as co-founder and Electrical Team lead of the UVic Environmental Engineering Club (UVEEC), he oversees the design of the electronics for the club's pilot project, an Unmanned Surface Vessel (USV).

🎓 Education

Fourth Year Bachelor of Engineering (Computer Engineering), *University of Victoria* ⧉
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 problems with multimeters, oscilloscopes, and function generators.
- Experience solving challenging electrical design problems while staying within real world constraints.
- Rapid problem-solving skills that involve quick thinking and good research skills.
- Procured all types 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, and Python.
- Extensive experience modelling and 3D printing prototype designs in Solidworks and Fusion 360.

💼 Professional Experience

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

- Analyzed and tested every circuit within two major company products to ensure individual circuit functionality and reliability.
- Designed a USB-A charging PCB that could charge a smart phone or an iPad from the power generated by a user's pedalling.
- 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.

Product Designer - Software,
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.
- Updated custom CAPL testing software to automate functional testing on all Dometic devices.
- Experimented with a radar collision avoidance system to integrate with a proof of concept project involving machine learning and AI.

🏠 Community Involvement

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

- Designing a Smart Power Board that monitor and control four different power lines.
- Educating fellow team members on schematic and PCB design within Altium by running Altium skill development tutorials.
- Leading the design of the USV's plethora of electronics, including the Central Controller Board, and its custom built 6S 9P battery.

📁 Projects

Some of Miguel's current projects include an open source Smart Programmable Load and a Power Distribution Board. For more information about his projects visit his project portfolio at the link attached: ⧉

⚒ References

Available upon request