Miguel Manguerra

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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 2021 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, JLCBPCB and, PCBWay.
- Developed firmware for STM32F0 microcontrollers in C and assembly.
- Proficient in C, C++, CAPL, and Python.
- Extensive experience modelling and 3D printing designs in Solidworks 2021.

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 a 6 axis robot arm and a Power Distribution Board. For more information about his projects visit his project portfolio at the link attached:

References

Available upon request