Ashwin Muruganandam

3947 Shorncliffe Road, Victoria BC, V8P 2T5 | +1 250-514-0509 | ash2win@uvic.ca | https://www.linkedin.com/in/ash2win/

Education

University of Victoria | Victoria, BC — **Jan 2019 - Present**
Bachelor of Engineering — **GPA: 7.63 / 9**
Computer Engineering, 4th year — Expected Graduation: 2024

Work Experience

Electrical Engineering Student | Buildings - Commercial — **Jan 2023 – Apr 2023**
Stantec Consulting Ltd. — **Vancouver, BC**

- Used Revit to apply engineering markups onto a 3D model space involving power, lighting, and fire alarm floor plans.
- Created over 20 accurate single line diagrams to support the design completion of commercial and industrial buildings.
- Collaborated with architects, engineers, and contractors in the preparation of construction documentation including electrical equipment specifications and schedules on Revit generated designs.

Electrical Engineering Student | Process Control & Automation — **May 2022 – Aug 2022**
Syncrude Canada Ltd. — **Fort McMurray, AB**

- Provided support to upgrade obsolete PLCs to newer Modicon platforms to achieve up to 8x better performance.
- Configured InTouch HMI on dedicated hardware to streamline communication between plant operations and PLCs.
- Assisted in the creation of a database of 100+ PLCs' firmware and modules installed resulting in significant time savings for organization of future projects.

Junior Learning Technology Assistant | Learning & Teaching Support & Innovation — **Sept 2021 – Dec 2021**
University of Victoria — **Victoria, BC**

- Led a team of 14 students to perform routine testing on several components of Learning Management System (Brightspace) to ensure and maintain reliability and functionality.
- Collaborated closely with university faculty and staff members to prepare 10+ online course sites on Brightspace.

Skills

Programming: C, C++, Python, Ladder Logic, FBDs, MATLAB, ARM Assembly, R, VHDL, Verilog
Hardware: PLC, HMI, FPGA, Oscilloscope, Microcontrollers, Circuit Elements, General Electrical Equipment
Software: Wireshark, Solidworks, KiCAD, Vivado, iCEcube2, Unity Pro XL, RSLogix 5000, InTouch HMI, Revit

Projects

Pong (Verilog)

- Programmed an iCE40 FPGA board using iCEcube2 to play the classic game Pong through a VGA display.
- Utilized buttons on the board as paddle control and two 7-segment displays to keep track of player score.
- Implemented switch debouncing, paddle and ball color selections, and UART for communication between user keyboard and FGPA board.

Alarm Clock

- Programmed an STM board to perform specific alarm clock functions using inputs from switches.
- Designed circuit schematic and a printed circuit board in a team of 2 using KiCAD that corresponded with the code.
- Used SolidWorks to design a 3D enclosure for the alarm clock in accordance with the dimensions of the PCB.

Sensor Assembly for Underwater ROV

- Placed 3rd in the UVic ECE Ocean Challenge 2022 for the product demonstration in a team of 2.
- Assembled an array of sensors to measure environmental qualities like temperature, conductivity, and water level.
- Utilized UART to send captured data to an ESP32 that handled data processing and storage onto an SD card.
- Used an RFID sensor for verification and Arduino UNO to visualize the measured data onto a 2x16 LCD display.

Autonomous Robot Design

- Used remote 3D software to design a VEX kit robot that detected variations in light by scanning a predetermined area of interest. Used RobotC to program and implement the robot's movements and functions.