Chathil Rajamanthree

Electrical Engineering Student

Vancouver, BC

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EDUCATION

University of British Columbia **Expected Graduation: May 2027**
Bachelor of Applied Science - Electrical Engineering *Vancouver, BC*
CGPA: 82.1% (Dean's Honour List)

Relevant courses: Digital Systems Design, Signals and Systems, Circuit Analysis II

Technical Skills

Software: SystemVerilog, ARMv7/Assembly, C, Python
Technologies: Quartus, ModelSim, Altium, MS Office/Google suite
Laboratory: Soldering, Function generator, Multimeter, Oscilloscope

Experience

University of British Columbia, Vancouver, BC **January 2025 – Present**
Undergraduate Teaching Assistant
- Offered individualized support to students in C programming and Arduino-based microcontroller development
- Debugged code and designed exam questions for APSC 160: Introduction to Computation in Engineering Design

UBC Bionics, University of British Columbia **September 2023 – Present**
Electrical & Embedded Systems subteam member
- Re-designing the Battery Management System for GRASP (bionic arm) to improve power distribution and optimize space through smaller batteries and efficient power management.
- Designing a USB-C Power Delivery controller to negotiate faster charging speeds.

Eco-Schools, Colombo, Sri-Lanka **September 2021 – May 2023**
Service Leader
- Led a group of 20 to achieve the Green Flag accreditation for the Overseas School of Colombo through projects such as garden beds and a biogas plant to increase sustainability within the school community

Technical Projects

Reduced Instruction Set Computer (RISC) **November – December 2024**
- Designed a Turing-complete RISC processor with memory and I/O using SystemVerilog to execute programs written upon a set of instructions similar to ARMv7
- Attempted pipelining instructions to improve performance through the DE1-SoC FPGA board
- Designed and performed RTL-level and gate-level simulations using testbenches on ModelSim to verify functionality pre-synthesis and post-synthesis

N76E003 Reflow Oven Controller **February 2025**
- Designed a Reflow Oven Controller using an N76E003 microcontroller on a breadboard, incorporating an op-amp for thermocouple voltage amplification to achieve a maximum temperature measurement error of ±2°C
- Developed firmware in 8051 assembly, implementing a finite state machine, interrupt service routines, and timers to interface with components including a buzzer and ADC pushbuttons.
- Used Pulse Width Modulation (PWM) to control the amount of power delivered by the oven via a Solid State Relay box.
- Used Python to receive temperature data using Serial Peripheral Interface (SPI) and display reflow progress using a strip chart plot on an external device.

Awards

Edward and Aldine Madsen Scholarship	2025
The United States President's Education Gold Award for Educational Excellence	2023
UBC Outstanding International Student (OIS) Award	2023
Mathematics AA HL Subject award for outstanding achievement in Mathematics - DP2	2023