

Education

University of Alberta | Alberta, Canada

September 2016 – April 2021

Bachelor of Science in Electrical Engineering

Skills

Programming: Python, C/C++, VHDL, Zephyr RTOS, Django, HTML & CSS, LaTeX, PostgreSQL, Bash

Platforms: Linux (Ubuntu, Ubuntu server, Debian), BSD (FreeBSD, TrueNAS, Synology)

Hardware: STM32, AVR, FPGA

Tools: VS Code, Eclipse, KiCAD, Simulink, Verilog, LTspice, Blender, Cmake, Vim, Simulink

Languages: English (fluent), French (fluent)

Experience

ZenCyber | Edmonton, AB

April – November 2020

Software Developer Intern

- Designed a Django based web application with the purpose of persistently monitoring client network services for vulnerabilities with industry leading penetration testing backend applications.
- Reconfigured automatically generated reports into client specific security reports using LaTeX and MailChimp to schedule report mailing.
- Planned, designed and tested a PostgreSQL based account databasing system that allowed application users to easily add new users and schedule their corresponding services.

Taurus Unified | Edmonton, AB

May 2021 – Present

IT Contractor

- Secured client networks by installing network hardware and completing policies for internal DNS, network access points and firewall servers using industry leading software & operating systems.
- Initiated, wrote and edited a program outline that aided clients in identifying security faults in their working environments via interview-style meeting, which is still in use today
- Performed penetration testing education services for clients with the purpose of increasing their on-site technical security, decreasing security-related service calls significantly.

University of Alberta | Edmonton, AB

May 2016 – Sept 2019

Maintenance Assistant

- Aided facilities and operations department personnel in maintaining University of Alberta residences, identifying and repairing systems when needed.
- Repaired furnace systems by testing control boards via schematic interpretation.
- Identified issues with and repaired various plumbing systems in Michener Park and Lister hall

Projects

Autonomous hydroponics garden

November 2021 - Present

- Designed a deep-water culture and NFT hydroponics system with a Zephyr RTOS based embedded device capable of monitoring various ambient qualities to ensure optimal growing conditions.
- Collected pH, EC, ambient temperature and humidity levels in the hydroponics growing area using a custom designed sensor board using KiCAD.
- Researched and implemented a photovoltaic sensor array that allowed for light spectrum optimization increasing the rate of plant growth.

OpenGL snake game & model viewer

September - October 2021

- Implemented the snake video game using OpenGL rendering libraries and Python.
- Designed a cubic static mesh model drawing tool capable of exporting designs as vertex map OBJ files.

Capstone Project | University of Alberta: Optimal electric bike energy management

- Designed an AVR based electrical bicycle motor control system capable of monitoring the users power input with the goal of optimizing the battery usage level over a predefined trip length.
- Tested, programmed and implemented hardware for the project onto PCB using KiCAD and LTspice.
- Implemented a mathematical model that predicted the future input power of a user and responded with adjustments to motor output power

Leadership

EE Club | University of Alberta | Edmonton, AB

August 2020 – August 2021

VP External

- Organized, drafted and published weekly newsletters to promote student group activities and unique opportunities with local companies such as PCL and Intuit.