

NIKOLA ZUPANCIC

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EDUCATION

Queen's University

Bachelor of Applied Science; Computer Engineering

Kingston, ON, Canada

September 2021 – April 2025

- **Relevant coursework:** Computer Architecture, Data Structures, Algorithms, Object Oriented Programming, Microprocessors and Embedded Systems, Operating Systems, Computer Networks, Database Management Systems, Numerical Methods & Optimization
- **Awards:** Dean's Scholars Distinction 2022-2023, Queen's University Excellence Scholarship 2021

WORK EXPERIENCE

Retail Associate

Scarlett Gardens

May 2022 - August 2022

Toronto, ON

- Helped customers by answering questions about plants
- Arranged plants in the Garden Centre based on new arrivals, current stock and climate

ACADEMIC PROJECTS

Engineering Design Project

January 2022 - April 2022

- Classified handwritten digits using Machine Learning algorithms (**CNN**, **KNN**, **Naive-Bayes**) with an accuracy of 97%
- Created a GUI in python using TKinter to guess drawn handwritten digits using specified ML algorithms
- Worked in a small team to optimize each ML algorithm

Arduino Engineering Design Project

September 2022 – December 2023

- Created a prototype pet collar to track the location and the heartbeat of a pet
- Acted as the leader of the group for decisions that were associated with **Arduino**
- Wrote code that provided functionality to different hardware components including: GPS, Buzzer and a Light

Mechatronics Project

Jan 2021 – Aug 2021

- Lead my group in designing and building an autonomous rover for a University Course
- Wrote **C++** code for **Arduino** to enable reliable rover movement using motor encoders, path finding using line sensors, picking up a flag using servo motors, and detect obstacles with infrared proximity sensors

PROJECTS

Personal Website | *CI/CD, Markdown, Hugo, Git, Cloudflare*

September 2023 – Present

- Created a personal website built with **Hugo** to showcase projects, my resume and contact info
- Deployed on Cloudflare pages via Github

GameBoy Emulator | *Rust, SDL2, Git*

June 2023 – Present

- Programmed a desktop app that emulates GameBoy Hardware including **CPU**, **Display**, and **Memory**
- Exercised **Bit Manipulation** techniques to decode and execute cpu instructions

SBC server | *Linux, Docker*

July 2023 – Present

- Configured a rockpro64 running **docker** on **debian-aarch64** as a NAS

TECHNICAL SKILLS

Languages: C/C++, Rust, Python, Java, Assembly, Bash, VHDL, HTML/CSS, Markdown, SQL

Libraries: SDL2, Raylib, OpenGL, TKinter

DevOps: Git, Docker

Tools: Linux, Cloudflare, QEMU/KVM, Android SDK

Hardware: Arduino, FPGAs, SBCs, Soldering, PCs