NIKOLA ZUPANCIC

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EDUCATION

Queen's University   Kingston, ON, Canada
Bachelor of Applied Science; Computer Engineering   *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
- **Awards:** Dean's List 2022-2023

EXPERIENCE

Garden Centre Employee   May 2022 - August 2022
Scarlett Gardens   *Toronto, ON*
- Helped customers by answering questions about plants
- Arranged plants in the Garden Centre based on new arrivals, current stock and climate

PROJECTS

Personal Website   September 2023 – Present
- Created a personal website built with **Hugo** to showcase projects, my resume and contact info
- Deployed on Cloudflare pages via Github
- Utilized: Markdown, Hugo, Git, Cloudflare
- Link: nikzu.dev

GameBoy Emulator | **Github:** https://github.com/c-ola/cassowary-gb   June 2023 – Present
- Developed a program that emulates Gameboy games on desktop platforms
- Exercised bit manipulation to decode and execute cpu instructions on emulated registers, memory and i/o devices
- Emulated interrupts generated by input and output hardware, including display, timer and joypad interrupts
- Emulated a pixel processing unit that decodes bytes in VRAM into pixels that are displayed using SDL2
- Utilized: Rust, SDL2, Git

Single Board Computer Server   July 2023 – Present
- Configured a rockpro64 to run **docker** on **debian** to host a NAS
- Used a VPN to allow for remote access from other networks

ACADEMIC PROJECTS

Engineering Design Project   January 2022 - April 2022
- Classified handwritten digits using ML algorithms **(CNN, etc)** with an accuracy of 97%
- Created a GUI in python using TKinter to guess drawn handwritten digits using specified ML algorithms

Arduino Engineering Design Project   September 2022 – December 2023
- Created a prototype pet collar that theoretically tracked the location and the heartbeat of a pet
- Acted as the leader of the group for decisions that were associated with **Arduino**

Mechatronics Project   Jan 2021 – Aug 2021
- Lead my group in designing a path finding rover for a University Course
- Wrote **C++** code for **Arduino** to path find, pick up a flag, and detect obstacles

TECHNICAL SKILLS

Languages: C/C++, Rust, Python, Java, Javascript, Assembly, Bash/Shell, HTML/CSS, VHDL, SQL
Libraries: SDL2, Raylib, React, OpenGL
DevOps: Git, Github/Gitlab, Docker
Tools: Linux, QEMU/KVM, Cloudflare, Android SDK
Hardware: Arduino, FPGAs, SBCs, Soldering