DANIEL RAYMOND

SYSTEMS DESIGN ENGINEERING

CONTACT

- daniel.raymond@uwaterloo.ca
- (647) 624-2704
- dan.raymond.ch
- /draymond63
- /in/drawmond63

SKILLS

- Python, C, Assembly, Go, Vue js, JavaScript, C++, CSS, HTML, Verilog
- Arduino, bread-board prototyping, circuit debugging
- CAD, EAGLE, Solidworks

EDUCATION

BASc Candidate
Systems Design Engineering (SYDE)
University of Waterloo | Class of 2024

EXTRA-CURRICULAR

Philosophy Club
- Created and hosted to introduce philosophy
- Designed lessons plans weekly

Varsity Ultimate Frisbee
- Balance university life with sports

SYDE '24 Social Representative
- Organized events for large groups

ACHIEVEMENTS

SHAD Valedictorian   (July '19)
- Voted by 64 other University of Calgary SHAD program members to represent the group.

Community Engagement Award (June '19)
- Selected out of 59 students for exemplary community involvement and participation in a wide range of extra-curricular activities.

SUMMARY

- Experienced in Python and Tensorflow
- Proficient in RISC programming environments (Assembly, C, etc.)
- Self-taught in various tcommunication protocol (I2C, SPI, UART)
- Excellent leadership, organizational, & communications skills

EXPERIENCE

Untether AI

AI Acceleration Hardware Engineer   (Jan-Present)
- Worked to improve cutting edge neural network inference ASIC
- Developed Python tests to verify their Verilog simulation
- Created device file interaction in C to assist runtime division
- Devised double buffer pipeline in C & Assembly to increase throughput by 100%

GAS Company

Graphic Arts Studio Intern   (July '18)
- Utilized industry-standard techniques in printing, machining, & editing
- Aided with specialty print production & digital preparation in Photoshop

PERSONAL PROJECTS

Binarized Sequential Neural Network Machine   (Mar-present)
- An independent breadboard processor for 1-bit quantized neural networks
- Neural network created using Keras, raw Tensorflow, Numpy, and pure Python
- Byte-packed model stored on EEPROM of circuit – XNOR to multiply each bit

Vibeify: Artificially Intelligent DJ   (Feb '20)
- Designed website to track 'vibe' of the room & play corresponding music
- Tracking motion of each body using Tensorflow JS: fully processed in browser
- Sorting algorithm to rank and play songs based on 'vibe' using Spotify API

Four-Bit Computer   (Jan-Aug '19)
- Designed a breadboard prototype from a basic block diagram
- Final product is comprised of a full PCB with a 3D printed case & an acrylic cover
- Hand-routed PCB made in EAGLE with over 200 connections & dozens of TTL ICs
- Custom RISC machine code language with an external PCB programmer

Flexible PCB Snake Game   (May '19)
- Designed & soldered a custom SMT PCB: created in EAGLE
- On-board MCU, 8x8 LED matrix, button input, & a solar panel for power
- Prototype coded in C, final product entirely in Assembly (600+ lines)
- Interrupt-driven code to drastically increase efficiency of the program