

Emilien Breton

EDUCATION

University of Ottawa

BSc WITH HONOURS IN COMPUTER SCIENCE,
DATA SCIENCE OPTION

September 2021 — Expected December 2025

Polyvalente Saint-Francois

IB MIDDLE YEARS PROGRAMME, SECONDARY SCHOOL DIPLOMA

September 2016 — June 2021

PROJECTS

Personal Website

A PORTFOLIO FOR SHARING VARIOUS PROJECTS

JavaScript • HTML • CSS • Markdown • NextJS • Git

- Designed and implemented appealing UI and optimized UX resulting in over 750 unique visitors a month
- Utilized caching system and optimized site-wide accessibility resulting in Lighthouse score consistently over 95%

AI Image Compressor

A NEURAL NETWORK THAT LEARNS TO COMPRESS SPECIFIC CATEGORIES OF IMAGES

Python • Tensorflow • Keras

- Implemented web scraper and image preprocessor optimized with numpy to generate millions of training samples in less than 5 minutes
- Created and implemented custom algorithm within autoencoder structure to allow for variable compression ratio with no overhead
- Supervised training process and tweaked settings leading to results of superior quality than JPEG compression when in favorable circumstances

IB Personal Project

DESIGN AND BUILD OF A RACING DRONE

May 2020 — February 2021

- Strategically put in place a dozen deadlines for the year-long project allowing for submission of final report several days early
- Designed project roadmap based on thorough understanding of possible complications resulting in only one major setback caused by defective parts

Stack-Based CPU

ASSEMBLER AND EMULATOR FOR A CUSTOM STACK-BASED CPU ARCHITECTURE

Rust • Assembly

- Wrote emulator that supports stack operations, 16-bit program ROM access and simple graphics through 128-byte 32x32 grayscale display buffer
- Wrote assembler that supports labels and macros allowing for efficient debugging along with human-friendly syntax and abstractions
- Proved custom instruction set Turing complete through implementation of Conway's Game of Life from scratch in Assembly language

EXTRACURRICULAR

DeFi the Conventional 2022

JavaScript • React • Rust

CANADA'S LARGEST DeFi HACKATHON

March 18th 2022 — March 20th 2022

- Won first place in DeFi category along with 2500\$ prize as part of a 3-member team
- Built fully functional MVP frontend and backend layers within tight 36-hour timeframe thanks to excellent time management and efficient collaboration and teamwork under pressure

Group Chat Moderator


COURSE-SPECIFIC DISCORD SERVER CREATOR, OWNER AND MODERATOR


University of Ottawa


- Built, promoted, organized and maintained several Discord servers allowing students to find course material easily and collaborate efficiently
- Created a Discord bot to help with moderation of over 500 members to ensure seamless experience for all students

April 2022

CONTACT

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 <https://emilien.ca/PORTFOLIO>

 [github/Bricktech2000](https://github.com/Bricktech2000)

 linkedin/in/emilien-breton

TECHNOLOGIES

Programming Languages

JavaScript • Python • C++ • Rust

Frameworks

React • NodeJS • NextJS • Express

Development Tools

Linux • Bash • Git • Github • VS Code • Vim

Other Skills

HTML • CSS • JSON • Markdown • LaTeX • C • Assembly • Notion • Fusion 360 • Cura • Figma • Raspberry Pi • Arduino

LANGUAGES

English *advanced*

SECOND LANGUAGE

French *advanced*

MOTHER TONGUE

Spanish *intermediate*

SIMPLE CONVERSATIONS

github.com/Bricktech2000/Resume