

# Emilien Breton

## PROJECTS


### Personal Website

A PORTFOLIO FOR SHARING VARIOUS PROJECTS *JavaScript • HTML • CSS • Markdown • Next.js*

- Designed and implemented appealing UI and optimized UX using Google Search Console resulting in over 1500 unique visitors a month
- Utilized Cloudflare caching system and optimized site-wide accessibility resulting in Lighthouse score consistently over 95%



### Stack-Based CPU



ASSEMBLER AND EMULATOR FOR A CUSTOM STACK-BASED CPU ARCHITECTURE *Rust • Assembly*

- Wrote stack-based emulator in Rust that supports 44 CPU instructions and graphics through 32x32 grayscale display buffer
- Wrote assembler with macro support resulting in approximately 10% smaller Assembly source files
- Proved custom instruction set Turing complete through  implementation of Conway's Game of Life from scratch in Assembly language

### DBLess Password Manager

A HASH-BASED, DATABASE-LESS PASSWORD MANAGER *Python • JavaScript • HTML • CSS • Next.js*


- Developed  custom cryptographic procedure based on SHA-256 to deterministically generate passwords on demand instead of encrypting them
- Built  cross-platform PWA with Next.js that generates passwords on demand and copies them to user's clipboard for convenience

More on  GitHub and in  Portfolio

## EXTRACURRICULAR

### Legacy Protocol

SUBMISSION FOR DEFI THE CONVENTIONAL 2022 *March 18th 2022 – March 20th 2022*  
*JavaScript • React • Rust*

- Won first place in Finance category of Canada's largest DeFi hackathon along with 2500\$ prize as part of a 3-member team
- Built  MVP smart contract backend from scratch in Rust with no prior experience in Web3, all within tight 36-hour timeframe


### CS Club Organizer

PROMOTED TO AN ORGANIZER OF THE UOTTAWA COMPUTER SCIENCE CLUB *June 2022 – Present*  
*University of Ottawa*

- Collaborated with other students in a team of 3 to organize various small-scale social events and meetups in Ottawa

### Group Chat Moderator

COURSE-SPECIFIC DISCORD SERVER CREATOR, OWNER AND MODERATOR *University of Ottawa*

- Built and promoted eight Discord servers allowing total of over 1000 students to communicate with their peers and share resources easily
- Improved moderation experience by creating  Discord bot to address groups of students based on specific criteria, extending capabilities of Discord mentions







## EDUCATION

### University of Ottawa

BSC WITH HONOURS IN COMPUTER SCIENCE *Dropped out after first year*

October 2022 • 921dbd4a08eaac3

## CONTACT

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## TECHNOLOGIES

### Programming Languages

Python • Rust • JavaScript • C++

### Development Tools

Linux • Vim • Git • GitHub

### Frameworks

React • Node.js • Next.js • Express.js

### Other Technologies



HTML • CSS • JSON • YAML • Markdown • LaTeX • C • Assembly • Raspberry Pi • Arduino

## OTHER

### Languages

French	<i>Native</i>
English	<i>Native</i>
Spanish	<i>Intermediate</i>
Russian	<i>Elementary</i>

### Interests

Electronics •  Robotics • 3D Printing •  Drone Building • Finance & Investing • Music

github.com/Bricktech2000/Resume