

Emilien Breton

EXPERIENCE

Hack the Hill
SOFTWARE ENGINEER — DEVELOPMENT TEAM

November 2022 — Present
University of Ottawa

Zeptile Software
SOFTWARE ENGINEER — WEB3

October 2022 — Present
Remote from Ottawa

Student Works
OWNER / OPERATOR

October 2022 — Present
Ottawa

uOttawa CS Club
CLUB EXECUTIVE

June 2022 — Present
University of Ottawa

- Collaborated with two other executives to organize a dozen small-scale events in Ottawa by giving talks and organizing workshops for over 100 students
- Put in place internal Notion workspace, improving short-term planning by providing single central platform to capture meeting minutes and track task progress

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 2500 unique visitors a month
- Utilized Cloudflare caching system and optimized site-wide accessibility resulting in Lighthouse score consistently over 95%

Stack-Based CPU
AN 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 simple assembler to resolve labels and convert Assembly source files into custom binary machine code
- 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 loads 2FA tokens, generates passwords and copies them to user's clipboard for convenience

Legacy Protocol
SUBMISSION FOR DEFI THE CONVENTIONAL 2022

March 2022
JavaScript • React • Rust

- Won first place in Finance category of Canada's largest DeFi hackathon along with 2500\$ prize as part of 3-member team
- Built MVP smart contract backend from scratch in Rust with no prior experience in Web3, all within tight 36-hour timeframe
- Worked in collaboration with Terraform Labs to officialize the protocol and secure additional funding prior to Terra Luna collapse

More on GitHub and in Portfolio

EDUCATION

University of Ottawa
BSC WITH HONOURS IN COMPUTER SCIENCE

Dropped out after first year
November 2020

- Admission scholarship — 95%+ average

CONTACT

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SKILLS

Programming Languages

Python • JavaScript • Rust • C++

Development Tools

Linux • Neovim • Git • GitHub

Frameworks

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

Other Technologies

HTML • CSS • JSON • YAML • Markdown • LaTeX • C • Assembly • Raspberry Pi • Arduino • VS Code • Figma • Notion

OTHER

Languages

French

Native

English

Native

Spanish

Intermediate

Russian

Elementary

Interests

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