

Emilien Breton

EXPERIENCE

Hack the Hill

DEVELOPMENT COORDINATOR — DEVELOPMENT TEAM *University of Ottawa • November 2022 — Present*

Zeptile Software

SOFTWARE ENGINEER — WEB3 *Remote from Ottawa • October 2022 — Present*

uOttawa CS Club

CLUB EXECUTIVE *University of Ottawa • June 2022 — Present*

- Collaborated with two other executives to brainstorm, organize and schedule a dozen small-scale events in Ottawa by giving talks and organizing workshops for over 100 students
- Designed 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 5000 unique visitors a month
- Leveraged 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*

- Designed and implemented stack-based emulator in Rust that supports 44 CPU instructions and graphics through 32x32 grayscale display buffer
- Developed basic 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*

- Devised  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
- Collaborated with Terraform Labs to officialize our 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*

- Admission scholarship — 95%+ average *November 2020*


CONTACT

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SKILLS

Programming Languages

Python • JavaScript • Rust • C++

Development Tools

Linux • Neovim • Git • GitHub • Docker

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 • Cloudflare

OTHER

Languages

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

Interests

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