

# Emilien Breton

## EXPERIENCE

**Hack the Hill**  
DEVELOPMENT COORDINATOR — DEVELOPMENT TEAM  
**Zeptile Software**  
SOFTWARE ENGINEER — WEB3  
**uOttawa CS Club**  
CLUB EXECUTIVE

*University of Ottawa • November 2022 — Present*  
*Remote from Ottawa • October 2022 — Present*  
*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  
**Stack-Based CPU**  
AN ASSEMBLER AND EMULATOR FOR A CUSTOM STACK-BASED CPU ARCHITECTURE  
**DBLess Password Manager**  
A HASH-BASED, DATABASE-LESS PASSWORD MANAGER  
**Legacy Protocol**  
SUBMISSION FOR DEFI THE CONVENTIONAL 2022

*JavaScript • HTML • CSS • Markdown • Next.js*  
*Rust • Assembly*  
*Python • JavaScript • HTML • CSS • Next.js*  
*March 2022 • JavaScript • React • Rust*

- 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%
- 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
- 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
- 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*  
*November 2020*

- Admission scholarship — 95%+ average

## CONTACT

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**linkedin/in/** emilien-breton

## 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 *Native*  
• English *Native*  
• Spanish *Intermediate*  
• Russian *Elementary*  
**Interests**  
Electronics • Robotics • 3D Printing • Mathematics • Drone Building • Finance & Investing • Productivity • Music