Justin Bax

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Education

University of Waterloo — **Waterloo, Ontario**
Bachelor of Software Engineering — *September 2024 — May 2029*

- **Academics**: Admitted to a highly competitive program with the President's Scholarship of Distinction

Vanier College — **Montreal, Quebec**
Diploma of College Studies, Computer Science & Mathematics — *September 2023 — May 2024*

- **Academics**: 97% academic average; entrance scholarship for excellent academic performance; Dean's Honour Roll

Technical skills

Programming Languages: C, C++, Python, Java, TypeScript, HTML/CSS, 6502 Assembly
Frameworks: Node.js, Next.js, Svelte
Tech/Tools: MongoDB, SQL, Git, REST API, Google Cloud API, Linux, Command line, OpenGL, Flask, NumPy

Professional experience

Julie Plante Computer Science Laboratory — **Montreal, Quebec**
AI research intern — *September 2024 — May 2025*

- Expected to complete a 32-week AI/LLM research internship during the 2024-2025 academic year
- Selected out of all Science students in Vanier to receive a grant for college-level research from the FRQNT

Tail'ed — **Montreal, Quebec**
Software engineer intern — *June 2024 — Present*

- Singlehandedly developed and deployed a web scraping API to AWS to integrate Devpost data in the application
- Automated the CI/CD workflow across the codebase with GitHub Actions and the AWS Serverless deployment CLI
- Optimized the leaderboard system to reduce the amount of database fetches required by more than 50%
- Gathered the student developer community with full Devpost and GitHub profile integration using Next.js

Projects

Spinich — **Montreal, Quebec**
Web application offering AI-powered optimized job search by cold emails — *January 2024*

- Development of the backend and the REST API of a Web app automating the sending of personalized cold emails
- Constant monitoring of the user's email inbox and AI analysis of the replies received for maximum efficiency
- Podium place and 3 prizes at BrebeufHx. Approached by a team of startup founders to discuss the innovative idea

SingularIO — **Montreal, Quebec**
Winning submission for McGill Physics Hackathon 2023 — *November 2023*

- Development of an interactive, physically accurate n-body simulation with a visualization of space-time distortion
- Chosen out of 140 participants to win First Place prize and People's Choice award. Built with Pygame and NumPy

NESRev — **Montreal, Quebec**
Cycle-accurate NES emulator / Rendering engine — *August 2021 — March 2022*

- Solo development of a Nintendo emulator achieving industry-level cycle accuracy. Features step-by-step execution, debugging tools, ROM file creation from assembly source code and correct graphics and audio pipeline.
- Built in plain C using a custom pixel rendering engine in OpenGL

Leadership experience

FLOSS (Open-Source) Club — **Montreal, Quebec**
Lead Organizer, Co-researcher — *September 2023 — Present*

- Co-researcher in a statistical study on the usability of Debian. Currently writing a scientific paper and expected to give a talk at a worldwide open-source conference. Created data analysis software to speed up the research
- Organized a hardware inventory marathon, leveraging skills in command-line scripting, troubleshooting and Linux
- Hosted a technical workshop for 20+ participants on networking-related use cases for Raspberry Pi
- Organized a day-long educational unconference-style event with a libre/open-source theme

Additional information

Activities: Math tutoring, jazz ensemble leader, classical trombone competitions, high ranking in annual math contests
Interests: Badminton, chess, quantum physics, learning Mandarin, non-fictional prose, game theory, jiu-jitsu