

Work Experience

- JNI Consulting Work**, [unannounced startup] Fall 2024
- Researching and conceiving a system for a Java application compiled with GraalVM Native Image to communicate via Java Native Interface (JNI) to a different JVM for running third-party code.
- Software Engineer, Facebook, Express Backbone team** 2018 – 2020
- Worked on EBB, Meta's inter-datacenter software-defined network.
 - Developed, tested, deployed, and troubleshooted:
 - C++ services,
 - C++ network daemons running on Arista switches,
 - Python command line tools.
 - Built a continuous monitoring system based on MPLS traceroute.
 - Investigated and resolved network-wide packet drops caused by the interaction of software components.

Education

- Master of Science in Computer Science, McGill** 2020 – 2023
- Courses:** Natural Language Processing, Theory of Proof Systems, Mathematical Theory of Machine Learning, Matrix Computations
 - Master's Thesis:** RNA 3D Structure Prediction by Loop Motif Assembly
 - Developed **rna_bits**, a **3D structural biology tool in Python**, iterating between rapid experimental implementation and refactoring phases.
 - Created data pipelines for extracting molecule fragments; analyzed data quality and investigated edge cases and incorrect assumptions.
- B. Sc. Joint Honours Mathematics and Computer Science, McGill** 2015 – 2018
- Selected courses:** Advanced Algorithms and Data Structure, Compiler Design, Applied Machine Learning, Intro to Operating Systems, Probability, Statistics, lots of Pure Math courses
 - GPA: 3.93** (with a 4.0 in CS courses)

Some Projects, Personal or Academic

- Node.js **Puppeteer "facade"** over a ClickFunnels affiliate marketing sign-up page to autofill coupon code field. Ran Google ads and got hundreds of sign-ups. April 2025
- UnflipGame.com**, an original puzzle game for browser/mobile. *Featured in the Hacker News Newsletter.* Spring 2024
- Modified and finetuned a **RoBERTa LLM** in PyTorch, for NLP course project. Fall 2020
- Compiler for a subset of Go**, in Rust and Flex+Bison. Lead a team of 3 people in course project. *Highest implementation accuracy among all teams.* Winter 2018
- Java bytecode optimizer**, reducing bytecode size by 31.9% on hidden benchmarks, greatly exceeding all-time record in course assignment. Winter 2018
- Bot for Halite II**. *Finished 37th out of 5800* in Two Sigma's multi-month game-playing AI bot competition. Fall 2017
- Lisp interpreter in x86-64 assembly** and Linux system calls. August 2017
- Exploration of **non-linear oscillator simulation techniques** for audio synthesis, for undegrad research. Real-time C++ programming and signal processing. Summer 2017
- Bohnspeil game-playing agent**: 1st place with a 96% win rate in artificial intelligence course tournament. Winter 2017
- WebSocket **pixel-art editor**, in HTML5, Node.js. Winter 2014
- Multiple **HTML5 Games**. Since 2012

Competitive Programming

- Current Codeforces rating:** 1767 Expert (handle: [Paul-Andre](#))
- Google Code Jam**, ranked among top 1000. Spring 2018
 - ICPC**, team ranked 3rd in Northeast North America Regional. November 2017
 - IEEEExtreme**, team ranked 4th in Canada, 84th worldwide. October 2017

Skills

- Currently most proficient in:* Python, JavaScript, C/C++, HTML/CSS.
- Having experience in:* Java, Rust, Bash, Ocaml, Go, Matlab, Haskell, Scheme, x86-64 ASM, VB6.
- Long-time GNU/Linux user.
- Fluent in English, French, and Russian.

Other Interesting Experiences

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| • Volunteer on an organic farm. | Summer 2023 |
| • Day camp monitor for kids age 6-10: Planning activities, leading groups. | Summer 2022 |
| • “Greening Agent” in Éco-quartier NGO: Visiting clients to assess tree-planting needs, taking and returning voicemail, planting trees and maintaining park. | Summer 2021 |
| • Teaching Assistant: grading, helping students debug code, preparing and giving lectures. | 2020-2022 |
| • Singer in McGill Choral Society. | 2015-2016 |
| • Actor—and prior to that set-builder and stagehand—in full-length college plays. | 2012-2015 |