William K. Lafond

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TECHNICAL SKILLS

Proficient Languages: C++, C, Java, Python, Go, SQL, OCaml, Bash, Linux
Technologies & Frameworks: SpringBoot, NGINX, MySQL, Django, MongoDB, Redis, PyTorch, TensorFlow
Developer Tools: Git, Docker, Kubernetes, AWS, GitLab, CUDA, Jira, Terraform, Bruno/Postman, CMake

EXPERIENCE

Backend Developer Intern — *Java, SpringBoot, Python*   May 2025 – Aug 2025
OneSpan   *Montreal, QC*

- Reduced customer service workload by 40% by independently delivering a **Spring Boot** microservice extending our **AWS Cognito** user service to support admin accounts, and validated APIs with **Bruno/Postman** while writing 30% less boilerplate than previous services.
- Refactored company's integration and unit tests with **SpringTest** and **JUnit**, increasing **SonarQube**'s code coverage from 65% to 90%, whilst also reducing 500+ lines of boilerplate code.
- Built **GitLab CI/CD** pipelines to enforce code quality and eliminate **technical debt**, introducing pre-commit hooks, push rules, and branch protection rules, leading to a 30% reduction in merge request rework.

Machine Learning Intern — *Go, Weaviate, Kubernetes*   May 2024 – Aug 2024
Mila   *Montreal, QC*

- Integrated **Weaviate** vector databases for dynamic skill retrieval by implementing hybrid search strategies, improving decision-making efficiency from 15% to 70%.
- Built concurrent **Golang** microservices for high-throughput RAG pipeline orchestration, reducing response latency by 35% and improving scalability.
- Redesigned deployment workflows with **Kubernetes** and **Docker**, cutting downtime by 50% and ensuring high system reliability.

PROJECTS

ChipDaddy | Code   2025
C++, SDL2

- Built a fully functional Chip-8 emulator with accurate CPU cycle timing, keyboard input, display, and sound support, capable of running classic ROMs at authentic speeds.
- Produced extensive documentation on architecture, instruction set, and SDL2 integration to support community contributions and ease of maintenance.
- Served as a foundation for developing **GameDaddy**, an in-progress cycle-accurate Game Boy emulator.

Rainbow but Slightly Worse | ML Paper + Code | 2025
Numpy, PyTorch

- Co-authored a large software project recreating Google's AI algorithm, Rainbow, but for quant trading.
- Cut training time by 33% using a custom tree structure for prioritized replay sampling in $\mathcal{O}(\log n)$.

McLovin | Code   2024
Django, PyTorch, MongoDB, Pinecone

- Built a dating & matchmaking website exclusively for McGill students using ML-based recommendations.
- Engineered K-means clustering in PyTorch to speed up Pinecone queries by $10\times$.
- Used Docker to streamline deployment and reduce launch time by 30%.

EDUCATION

McGill University   Montreal, QC
Double Bachelor of Science in Computer Science and Mathematics   *Expected May 2026*

- **CGPA: 3.75 / 4.00**
- Exchange Semester at the National University of Singapore (NUS) for Fall 2025

Data Structures & Algorithms, Computer Architecture, Compiler Design, FP/OOP, Reinforcement Learning