William K. Lafond

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Experience

Machine Learning Intern — ***Python, TensorFlow, Weaviate*** May 2024 – Aug 2024
Mila *Montreal, QC*

- Integrated **Weaviate** vector databases for dynamic skill retrieval by implementing **hybrid search strategies**, increasing decision-making efficiency from 15% to 70%.
- Conducted **A/B testing** of various **RAG pipeline designs**, identifying configurations that enhanced evaluation throughput by 20% with no loss in model quality.
- Implemented CI/CD pipelines using **Kubernetes** and **Docker**, cutting down deployment frequency by 50%.

Software Developer Intern — ***Java, SpringBoot, MySQL, React*** Jan 2024 – May 2024
Ensemble AI Real-Estate *Montreal, QC*

- Designed and optimized **MySQL** schemas and tables using **SpringBoot RESTful APIs**, reducing query times for relational classification by 25%.
- Implemented **Java integration tests** with **Spring Test**, ensuring seamless interaction in backend services .
- Built 10+ reusable and dynamic **front-end components in ReactJS**, enhancing the OCR platform's user interface and functionality.

Education

McGill University Montreal, QC
Double Bachelor of Sciences: Computer Science and Statistics *Expected May 2026*

- **CGPA: 3.88 / 4.00**

Data Structures and Algorithms, Object-Oriented/Functional Programming, Software Systems, Intro Data Science

Projects

McLovin (University Dating Site) | ***Django, PyTorch, MongoDB, Pinecone*** 2024

- Built a dating & matchmaking website exclusively for McGill students that utilizes ML-based matching.
- Engineered K-means clustering with **PyTorch** to decrease profile matching time by 10× by partitioning **Pinecone** queries across clusters.
- Implemented **Docker**, streamlining deployment processes and enhancing scalability, resulting in a 30% reduction in deployment time and improved system reliability.

LitCode (Multiplayer Coding Game) | ***Flask, Next.js, MongoDB*** 2024

- Built a competitive multiplayer coding platform enabling real-time LeetCode battles.
- Developed **Flask**-based microservices supporting secure **authentication** and **matchmaking** that can handle 1000+ concurrent requests.

Magic Chalk (Virtual Whiteboard) | ***Numpy, OpenCV, TensorFlow*** 2023

- Built a virtual whiteboard app featuring finger-based writing detection powered by **OpenCV** and **ML**.
- Trained a custom **TensorFlow CNN model** with 96% accuracy for LaTeX parsing, supporting 500+ unique symbol predictions.

Technical Skills

Proficient Languages: Go, Python, Java, JavaScript/TypeScript, C, SQL, Linux
Technologies & Frameworks: SpringBoot, Django, MongoDB, Angular, PyTorch, TensorFlow, Scikit-learn, Next.js
Developer Tools: Git, Docker, Kubernetes, AWS, GitLab, CUDA, Jenkins

Leadership Experience

Project Lead Aug 2024 – Present
MAIL, McGill University's student-run AI lab *Montreal, QC*

- Led a team of 4 developers, conducting regular **strategy meetings** to define **project goals**.
- Held teaching **workshops** and **presentations** on **Docker**, **Git**, **AWS**, and **MongoDB** for beginner developers.