Jake Fogel

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EDUCATION

McGill University, Montreal, QC — Expected May 2026
Bachelor of Science in Computer Science
Exchange Program: Sophia University, Tokyo, Japan (Mar – Aug 2025)
Relevant Coursework: Algorithms & Data Structures (COMP 251), Applied Machine Learning (COMP 551), Algorithm Design (COMP 360), Operating Systems (COMP 310), Software Design (COMP 303), Computational Biology Methods (COMP462)

EXPERIENCE

Global SAP Innovation Intern – Syntax — *May 2024 – Aug 2024*
- Developed a SaaS platform utilizing LLM agents and advanced prompting techniques (self-consistency, chain of thought) to automate the creation of planning documents, code, and test cases for SAP RICEFs.
- Engineered a high-efficiency Python API with FastAPI, integrating a custom RAG system leveraging Chroma DB to manage state persistence and document parsing.
- Deployed the Python API on an SAP Cloud Foundry server, streamlining CI/CD pipelines for automated testing and maintenance.
- Documented the entire development process, ensuring clarity and knowledge transfer across the team, and supporting long-term project sustainability.

Junior Software Developer – Advantage Group International — *May 2023 – Aug 2023*
- Developed JavaScript workflow rules, following Agile methodology, to automate the company-wide ticketing system (YouTrack) increasing transaction efficiency by 152% on average.
- Designed mock-ups for Advantage survey report slides, providing valuable input for the final Tableau implementation to enhance data visualization and presentation quality.
- Served on a 3-person selection committee evaluating candidates for the Junior Software Developer role.

Director, Game Design Camp – UCC Summer Camps — *Jun 2022 – Aug 2022*
- Oversaw hiring decisions for summer staff, resulting in qualified and engaged new hires.
- Led a team of 5 staff and gave regular performance evaluations.
- Created and led comprehensive C# and Unity lessons, increasing program efficiency via improved training material.
- Liaised with parents throughout the summer and ensured that parent/camper expectations were met.

PROJECTS

Simulated Operating System — *Fall 2025*
- Developed a multi-component OS in C, including a custom shell, multi-process scheduler (FCFS, SJF, RR, AGING), and a demand paging memory manager with an LRU replacement policy.

Emotion Classification with LLMs and Word2Vec — *Fall 2024*
- Evaluated baseline models (Random Forest, XGBoost, Softmax) with Word2Vec embeddings, identifying performance limitations due to class imbalance.
- Fine-tuned and benchmarked multiple BERT-based models (BERT-base, DistilBERT, RoBERTa) on the 28-label GoEmotions dataset, achieving a 73% accuracy improvement over the Naive Bayes baseline.

Medical Image Classification — *Fall 2024*
- Built a custom convolutional neural network on the OrganAMNIST medical image dataset, achieving 89.35% test accuracy (27.3% improvement over baseline perceptron).
- Applied transfer learning by fine-tuning a pre-trained ResNet18 model to achieve 84.85% test accuracy, conducting hyperparameter searches on learning rates and regularization.

Hidden Markov Model Gene Finder — *Fall 2024*
- Implemented the Viterbi (dynamic programming) algorithm from scratch to build a 4-state Hidden Markov Model (HMM) for bacterial gene finding.
- Trained HMM parameters by parsing *Vibrio cholerae* genomic and annotation files, achieving a 60.8% perfect-match accuracy on a test genome (outperforming the standard 50% project benchmark).

ACTIVITIES & LEADERSHIP

Experience Team Lead, McHacks Hackathon (McGill University) — *2024 – Present*
- Responsible for team recruitment, leading technical workshops throughout the year, organizing hackathon seminars, panel discussions, and activities, and securing hotel and transportation partnerships.

McGill Dobson Cup 2024 Cohort (Lean Startup Program) — *2024*

TECHNICAL SKILLS

Languages: Python, Java, C, C#, JavaScript, HTML/CSS, SQL, OCaml
Frameworks & Libraries: React, Node.js, FastAPI, ChromaDB, pandas, NumPy, Django, PyTorch, Scikit-learn, Matplotlib
Tools: Git, Bash, SAP Cloud, Unity, VS Code, Visual Studio, PyCharm, IntelliJ