






Hailey Quach

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Education

**Bachelor's of Science,
Computer Science, Honors**
Concordia University
2021 – September 2025
Montreal, QC, Canada

Skills

Programming Languages: C, HTML/CSS, Java, JavaScript, MySQL, PHP, Python, SQL, bash, csh •

Libraries & Frameworks: JUnit, Keras, Matplotlib, NumPy, Pandas, PyTorch, React, Scikit-learn, Tensorflow, Vue.js •

Tools & Platforms: Docker, Eclipse, Git, Github, Google Cloud Platform, IntelliJ, PyCharm, VS Code, Visual Studio

Awards

Peter Matthews Memorial Scholarship
Concordia University
March 2024

ConU Alumni Assoc In Course Bursary
Concordia University
September 2023

Michele Thibodeau Entrance Bursary
Concordia University
September 2021

Professional Experience

NSERC-USRA Research Assistant

Atlas Analytics Lab

May 2024 – present | Montreal, QC

- Spearheaded a project in Computational Pathology (CPath) using deep learning to enhance Computer Aided Diagnosis (CAD) systems using Whole Slide Images (WSIs) using Python, libraries such as NumPy, Matplotlib, PyTorch, Tensorflow, Keras, Scikitlearn and bash scripts
- Increased model accuracy on average by 15% for new, unseen WSI data distributions through advanced Parameter Efficient Fine Tuning (PEFT) techniques
- Increased specificity in cancer detection by 20%, reducing false positives in diagnostic predictions on the CHUM dataset

CUSRA Research Assistant

Health-X Lab

May 2023 – September 2023 | Montreal, QC

- Analyzed and characterized spectral information of different tissue classes in the fields of computational biology using Python and libraries such as NumPy, Matplotlib, PyTorch, Tensorflow, Keras, Scikit-learn
- Implemented machine learning algorithms for blood vessel segmentation, achieving above 90% accuracy for 80% of the models on the test set
- Increased segmentation accuracy by 20% through optimal feature selection strategies, enhancing the clinical applicability of research findings

Junior Software Developer Intern

Air Canada

September 2022 – January 2023 | Montreal, QC, Canada

- Reviewed and updated over 20 existing bash scripts and relevant documentation, ensuring a 100% update rate which enhance accuracy and usability for ongoing and future operational needs
- Enhanced the internal reporting website at Air Canada using HTML, CSS and JavaScript, by designing and integrating new sections and tools that improved user engagement by 30% and enhanced data accessibility
- Built automation scripts using bash, csh and Perl, streamlining report production and saving 2 hours of manual work per week

Projects

Catsume

May 2024

- Developed an automated scraping tool using Python to gather data on new animals available for adoption from Montreal's SPCA website
- Implemented a custom RSS feed generator (converting JSON to XML), then deployed the application using Docker

Galactic Healer

March 2024

- Built an AI-based Web Interface based educational game using ReactJS, CSS, JavaScript, Python, Supabase to increase awareness about rare diseases and symptoms, winning 1st place at Code To Give Hackathon hosted by Morgan Stanley