

# Michael Ferreira

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## EDUCATION

### University of Waterloo

*Bachelor of Computer Science*

Waterloo, ON

Sept 2025 – Apr 2030

### Wilfrid Laurier University

*Bachelor of Business Administration*

Waterloo, ON

Sept 2025 – Apr 2030

## TECHNICAL SKILLS

**Languages:** TypeScript, Python, JavaScript, Racket, C, HTML/CSS, SQL (Postgres), Swift

**Technologies:** React, Node.js, Django, Next.js, TensorFlow, TailwindCSS, Git, Docker, Chrome DevTools

**Libraries:** pandas, NumPy, Matplotlib, openpyxl, Axios, Scikit Learn, OpenCV, SwiftUI

## EXPERIENCE

### Software Developer Intern

Feb 2026 – Present

*Cache*

*Toronto, ON*

- Led end-to-end deployment of Stripe payment processing, authentication, and user management across a React web app and iOS Swift app, supporting 100+ users and 1,500+ transactions
- Designed and optimized a PostgreSQL database on Supabase powering 50+ API endpoints, achieving sub-100ms response times through caching, denormalization, and memoization
- Delivered 10,000+ lines of production code across the full stack and mobile app, driving \$5,000+ in revenue and enabling 5x user growth through feature development and performance improvements

### Software Engineering Intern

Nov 2024 – Mar 2025

*Local Reach*

*Kingston, ON*

- Refactored the website to leverage SSR and SSG techniques, reducing client-side bundle size by 68% and improving initial page load time from 2.8s to 0.9s.
- Developed YOLO computer vision pipeline for automated TV display recognition in retail stores, achieving 30+ FPS throughput with sub-500ms latency through OpenCV preprocessing; technology acquired by Taiv (YC W20)
- Engineered a neural network audio classifier using MFCC, mel-spectrogram, chroma, and tonnetz features using librosa, achieving 92% accuracy with a 3-layer dense architecture optimized through 64-epoch training

### Charity CEO and Lead Developer

Dec 2024 – Aug 2025

*Baobab*

*Toronto, ON*

- Built and deployed a full-stack MERN donation platform serving 10 charitable organizations with 90+ active users, contributing 9K+ lines of production code that facilitated \$1,000+ in donations
- Implemented JWT-based authentication with bcrypt password hashing and RBAC protecting 50+ API endpoints while maintaining sub-100ms average response time
- Optimized MongoDB schema with compound indexes on 3 core collections achieving 40% faster query performance and supporting 10x data volume scalability through denormalization strategies

## PROJECTS

### Sublet Centre | *TypeScript, Next.js, PostgreSQL, Supabase, Docker, TailwindCSS*

Nov 2025 – Present

- Built a full-stack subletting platform to support 100+ listings, targeting off-campus student housing
- Implemented secure authentication and role-based access control using Supabase Auth
- Used denormalization in PostgreSQL schema to manage listings and user data, while reducing query latency
- Developed server-side rendered search and filtering features, improving SEO performance and reducing initial page load time by 250%

### Forex Predictor | *Python, Scikit Learn, Pandas, NumPy, Matplotlib, YFinance*

Sept 2025 – Dec 2025

- Engineered 90+ features from technical indicators (RSI, MACD) and macroeconomic data to predict forex price movements with 93% accuracy in direction classification for predicting currency movements in 5 years
- Trained Random Forest and Gradient Boosting models using time-series cross-validation, achieving  $R^2 = 0.84$  on EUR/USD next-day returns
- Automated data ingestion and evaluation pipelines, processing 100,000+ historical data points across multiple currency pairs over 25 years using the Yahoo Finance API