

# Alexander Yoon

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## Education

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### McMaster University

Bachelor of Software Engineering | GPA: 3.78/4.00

Hamilton, ON

Graduated May 2026

- **Relevant Coursework:** Data Structures & Algorithms, Software Design, Databases, Computer Networks & Security, Machine Learning, Software Testing, Distributed Systems, Parallel Computing

## Experience

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### Amazon

Software Development Engineer Intern

Vancouver, BC

May 2025 – Aug. 2025

- Built Overnight Upload for Amazon Photos Android in Kotlin, coordinating WorkManager-based background upload scheduling, retry behavior, and user notification flows for a product with 200M+ users.
- Implemented Android background execution logic using system-aware scheduling constraints to improve backup reliability during overnight charging and idle windows.
- Integrated Android feature logic with AWS-backed services to support upload state handling, failure recovery, and feature-gated rollout.
- Created metrics dashboards and alarms for upload failure states, reducing mean time to detect failures by 30% and improving operational visibility for the team.

### CIBC

Software Engineer Intern

Toronto, ON

Sep. 2024 – Apr. 2025

- Built Azure Data Factory and Azure Databricks pipelines to ingest, validate, and transform millions of Salesforce ECRM records for production analytics and reporting workflows.
- Developed Python REST services and automation scripts that standardized reporting workflows, saving 10+ hours of manual data preparation per reporting cycle.
- Optimized SQL, PySpark, Pandas, & NumPy preprocessing jobs, reducing recurring pipeline runtime by approximately 30%.
- Integrated pipeline outputs with Salesforce ECRM workflows, supporting production data access and stakeholder-facing reporting use cases.

## Projects

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### Pocket AI | Capstone Project | *React Native, TypeScript, Flask, Python, Whisper, REST APIs*

[GitHub](#)

- Built a React Native and Flask mobile system that converts noisy hands-free voice commands into structured farm tasks, reminders, and health event logs.
- Developed a Whisper-based voice-to-task pipeline with rule-based entity extraction for cow IDs, dates, priorities, assignees, and confirmation prompts.
- Implemented authenticated task CRUD workflows with offline-safe task handling, confirmations, reminders, and backend synchronization through REST APIs.

### CraveAI | *FastAPI, React, LangChain, OpenAI API, ChromaDB, Google Places API, Mapbox, Docker*

[GitHub](#)

- Built a location-aware restaurant recommendation chatbot using FastAPI, React, Google Places API, and Mapbox to translate natural-language cravings into ranked nearby suggestions.
- Designed a RAG-based recommendation pipeline with LangChain, GPT-4, ChromaDB, embeddings, and vector search to retrieve cuisine context, rank restaurants, and generate explanation-backed results.
- Containerized the application with Docker and implemented REST API endpoints for restaurant search, favorites, user feedback, geolocation, and map-based result rendering.

### MAL-AI: TV Score Predictor | *Python, FastAPI, scikit-learn, Pandas, React, Vite, Tailwind*

[GitHub](#)

- Built an end-to-end ML prediction system using historical MAL metadata to engineer tabular features, train regression models, and serve score predictions through FastAPI.
- Implemented leakage-safe train/validation workflows with scikit-learn, Pandas, and NumPy, achieving validation MAE of 0.506 and RMSE of 0.584 before serving upcoming-season predictions.
- Developed a React, Vite, and Tailwind frontend with dynamic prediction cards, score visualizations, filtering, and CSV export.

## Technical Skills

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**Languages:** Python, Java, Kotlin, SQL, C, C++, JavaScript, TypeScript

**Frontend & Mobile:** React, React Native, Android, WorkManager, Tailwind, Vite

**Backend & APIs:** FastAPI, Flask, Node.js, REST APIs, authentication, background processing

**Cloud & Data:** AWS, Azure, Azure Data Factory, Azure Databricks, ETL, PySpark, Salesforce, MongoDB, SQLite

**ML & AI:** scikit-learn, Pandas, NumPy, regression, RAG, embeddings, vector search, LangChain, ChromaDB, OpenAI API

**Developer Tools:** Git, GitHub, Bitbucket, Docker, Vercel, Render, CI/CD, Postman, Android Studio, JIRA, SOAtest