

Eric Solak

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EDUCATION

McMaster University | Hamilton, ON

2022 - May 2026

Bachelor of Engineering, Software Engineering

- cGPA: 3.70/4
- Relevant courses: Applications of Machine Learning, Real-Time Systems, Databases, Data Mining

WORK EXPERIENCE

CATTLElytics Inc. | Hamilton, ON

Sep 2025 - Apr 2026

Software Engineer

- **Led AI development** for Pocket AI, an AI-powered hands-free app for workers who can't stop to type: it listens to natural speech to create and manage tasks in real time. Delivered as a complete product to CATTLElytics, a platform managing **1 in 50 cows across North America**.
- **Directed a team of 5 engineers** through the full product development lifecycle in 8 months, from requirements gathering and architecture design to production handoff, delivering a fully functional application now being integrated into CATTLElytics' platform.
- Integrated OpenAI Whisper for real-time audio transcription, validated through usability testing that achieved **98% system voice recognition accuracy** across 200 test commands under simulated barn noise, exceeding the **95% project target**.
- Built a Flask backend powering voice-to-task workflows with REST APIs for authentication, task lifecycle management, and synchronization with CATTLElytics' proprietary storage system.
- Implemented an **offline-first architecture** with local SQLite storage and background syncing, ensuring reliable performance in low-connectivity farm environments.
- Designed and built mobile UI components in React Native (Expo), including task views, audio capture flows, and speech confirmation feedback; usability testing yielded a mean satisfaction score of 4.4/5.

PROJECTS

Wildfire Risk Classifier | Python, PyTorch, FastAPI, Docker, AWS EC2

Sep 2025 - May 2026

- Developed a neural network to classify regions into low, medium, and high wildfire risk using **118,000+ samples** from NASA FIRMS and Open-Meteo datasets.
- Designed a **4-layer MLP** with batch normalization, dropout regularization, and weighted cross-entropy loss to address class imbalance across risk categories.
- Achieved a **94.3% test accuracy** with high F1-scores across all classes, outperforming Random Forest and SVM baselines by **15%**.
- Deployed a **containerized REST API** (FastAPI, Docker) to AWS EC2 and Render, enabling real-time wildfire risk inference via HTTP endpoints.

SneakPeek: AI Mobile App | Python, PyTorch, React Native, JavaScript

Jan 2025 - Mar 2025

- Built a full-stack mobile app for **AI-powered sneaker identification** and social forum, where users upload images and receive AI-identified shoe model, brand, and purchase links.
- Trained a custom DenseNet201 AI model on a labelled dataset for sneaker identification, applying a data augmentation pipeline (perspective transforms, saturation jitter, geometric transforms) to maximize generalization.
- Architected a **multi-agent Blackboard system** where Google Gemini 2.0 Flash, GPT-4o, and the custom PyTorch model each submit predictions to a shared space; a central Gemini controller arbitrates and selects the final result.

TECHNICAL SKILLS

Languages: Python, Java, C++, JavaScript, TypeScript, HTML/CSS, SQL, C

Frameworks & Libraries: PyTorch, FastAPI, Flask, React Native, NumPy, Pandas, scikit-learn

Tools: Docker, AWS EC2, Render, Claude Code, GitHub Actions, JUnit, SQLite

HOBBIES

Self-taught musician (piano & guitar, 10 years), chess, weightlifting, running