Arjun Sarao
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Work Experience

AI Solution Specialist | *City of Hamilton ITS* Jan 2024 – Present
- Identified optimal solution for Generative-AI-assisted RFP evaluation platform; Developed and presented Retrieval Augmented Generation chatbot web app using **embedchain**, **AzureOpenAI**, **streamlit**, and **chromadb**. Forwarded for formal deployment approval.
- Consulted with Digital Solutions team for upgrading homepage functionality with Generative AI.

Full-Stack Web Developer | *Starai Tutoring* May 2022 – March 2023
- Informed, shaped client POV; Wire-framed a responsive, multi-page static website based on business needs in **Figma**.
- Developed website using **JavaScript (React.js)** in conjunction with **Bulma.css**, hosted it on **GitHub Pages**.
- Implemented sign-up form submission via **Firebase** cloud-function and SMS notifications with **Twilio**.

Projects

ARM-LEG Simulator | *Pseudo-ARM Assembly Simulator written in Python* December 2023
- Wrote CLI program following modular design **Python** best practices, and Object-Oriented Design principles.
- Added test-suite using **pytest** and linting using **ruff**, integrated them into **GitHub Actions**.

DeepLog | *MacOS App for Productivity Tracking.* September 2023
- Implemented app using **SwiftUI**.
- Added metrics such as time between accomplishments, churn-rate, and activity graph; stored metrics in **supabase** database.

SeeFood | *Image Recognition Java App with TensorFlow CNN* January 2022
- Curated dataset from Kaggle; Wrote **Python** scripts for scraping images from google images and preprocessing.
- Wrote model architecture using **TensorFlow** and **Keras**; Used elu activation and ADAM optimizer.

Education

Honours Bachelor of Computer Science (CO-OP) | *University of Waterloo* Sept. 2022 – present
- Awarded the President's Scholarship.
- **Relevant Coursework**: Designing Functional Programs (**Racket**), Elementary Algorithm Design and Data Abstraction (**C**), Object-Oriented Software Development (**C++**), Calculus III, Linear Algebra II

Self Learning

Machine Learning Specialization | *Stanford Online + Coursera* August 2022
- Supervised Machine Learning: Regression and Classification (**Linear Regression, Logistic Regression**)
- Advanced Learning Algorithms (**Neural Networks, Decision Trees**)
- Unsupervised Learning, Recommenders, Reinforcement Learning (**Clustering, Anomaly Detection, Collaborative Filtering, Deep Q-Learning**)

Deep Learning Specialization | *Coursera* July 2022
- Neural Networks and Deep Learning (**NNs**)
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization, and Optimization
- Convolutional Neural Networks (**CNNs**)
- Sequence Models (**RNNs, GRUs, LSTMs, Transformer Networks**)

Technical Skills

Languages: Python, C/C++, HTML/CSS, Bash
Developer Tools: Git, Google Cloud Platform (Firebase), VS Code, PyCharm, IntelliJ
Libraries: NumPy, pandas, Matplotlib, langchain/embedchain, streamlit, sympy, supabase

Personal Achievements

Hackathons: 2x Google Cloud Prize Recipient (*UncommonHacks, Hack-o-Lantern*), 1st place People's Choice (*WinHacks 2021*), Best Theme Hack (*PreHackstoric*)
Chief Petty Officer 2nd Class: Appointed corps Regulating Petty Officer; Certified CanSail 2.