

Harlan Jazz Ferguson <https://www.linkedin.com/in/harlan-ferguson-09b55010b/>

AI DEVELOPER

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Work Experience

Software Engineer, George Brown College, Research & Innovation Dept., Toronto, ON, 01/2024-03/2024

- Led the development of a mobile application for an industry partner, enhancing process efficiency by 30% by consolidating multiple systems into one solution.
- Engineered using a JavaScript-based tech stack: React-Native for mobile development; Node.js, and Express.js for backend services, with SQLite and HTMX for database management and dynamic web applications.
- Translated complex stakeholder requirements into a functional design; built and optimized the solution from the ground up; and successfully demonstrated the application to industry stakeholders.

Artificial Intelligence (AI) / Machine Learning (ML) Projects

Computer Vision Emotional Expression Detection (PyTorch, Python, Flask, React.js)

Optimized a CNN for the FER-2013 dataset, achieving a 68.2% test accuracy on 36k 48x48 greyscale facial images—close to the expert benchmark of 75.2%. Subsequently, developed a React web app that captures video via webcam, processes it on a Flask server to match model input requirements, and uses the trained model to predict and display corresponding emojis in real-time on the user's changing facial expressions.

Phishing Email Detection Browser Extension (scikit-learn, Python, Flask, JavaScript)

Facilitated the creation of an advanced Chrome extension for detecting phishing emails with 90% accuracy. Demonstrated technical skill and flexibility in a dynamic hackathon setting, applying critical problem solving to develop an effective security tool.

Reddit Title Predictions (scikit-learn, Python, Django, Pandas, TypeScript, React.js, Reddit API)

Generated a unique dataset using Reddit's API and then applied data-cleaning techniques to ensure an accurate representation of data. Built a machine learning classification model using my dataset to achieve an 80% F1 score. Proved my data science abilities as well as my full-stack capabilities by creating a user-friendly web application for users to interact with the model in real time.

Demos of all my projects can be found on my website.

Achievements

- 2nd place in George Brown College's Design Jam 2024
- Top 18% in IEEEExtreme 2023 international programming competition with over 20,000 participants
- Top 27% in IEEEExtreme 2022 international programming competition with over 14,500 participants
- Competed in Bell GeekFest 2023 / 2022 and ActInSpace International Hackathon 2022

Education

George Brown College, Advanced Diploma: Computer Programming and Analysis, 09/2021-04/2024

- GPA: 3.48 | Dean's Honour Roll
- Co-founder and VP of GBC Computer Science Club

George Brown College, Advanced Diploma: Business Administration, 09/2017-04/2020

- GPA: 3.32 | Dean's Honour Roll