

ETHAN RONG

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EDUCATION

University of Western Ontario | 4.0 Cumulative GPA (90.6%)

2022-2027

Bachelor of **Computer Science** Honors; **Ivey** Advanced Entrance Opportunity (AEO)

Relevant Coursework: **CS Fundamental 1026/27**, **Data Science 1000**, Introduction to Business 1220

TECHNICAL EXPERIENCE

- **Languages:** Python, Java, HTML5, CSS, JavaScript
- **Operating System:** Windows, Linux/Unix
- **Tools:** PyCharm, Jupyter Notebook, Visual Studio Code, Github, APIs
- **Libraries:** Flask, Sklearn, Pandas, Numpy, Matplotlib, Seaborn, OpenCV, Java Swing, React JS
- **Concepts:** Object Orientated Programming, Data Structures and Algorithms, Model View Controller Architecture

AWARDS

- **Hackathons** – 4th Out of 80 teams at Hack Western 9 | 2nd Out of 30 participants at MapleHacks
- **Case Competition** – 2nd Place Out of 30 teams at WFN's Technology Consulting Competition 2023
- **Product Design** – 2nd Place Out of 35 teams at WFN's Product Design Sprint Competition 2023
- **Model UN** – 2nd Place out of 80 delegates at MIT Model UN Conference 2021

PROJECTS

Nourish-Now | Machine Learning (ML), Keras, Jupyter, Pandas

<https://devpost.com/software/norishnow>

- Developed and deployed a web app using **React JS**, utilizing a **Long-Short-Term-Memory (LSTM)** neural network model to enable charity donors and policy-makers to forecast future demand for the Women Infant Children food program in the US on a state-by-state basis; The LSTM model was created using **keras**, and was trained on **7,500 data points** obtained from Kaggle yielding an accuracy score of **>90%** for predictions involving future program costs and demand
- Incorporated a food search feature that showcased specific foods most needed by WIC recipients by using **ChatGPT API**
- Pitched and judged by representatives from the Community Food Centre Canada at **Maple-Hacks 2023**, resulting in **2nd place** in the Zero Hunger Hack category

Hover-Touch | Python, OpenCV, Google Cloud API, Github

<https://devpost.com/software/hovertouch>

- Built and exhibited a video-to-text technology using **Open CV** and **Python**, enabling non-verbal individuals to communicate via air-written messages on video technology at **Hack Western 9**, resulting in **4th out of 80** teams overall
- Combined hardware-system built with an **Arduino Nano** with software that uses **Google Cloud Vision API** to perform real-time hand tracking and optical character recognition, with a tested **98.3% accuracy score**

Eye-Explore | Python, APIs, Flask, Firebase Database

<https://devpost.com/software/eyeexplore>

- Created a mobile app that would describe a person with vision impairment's surroundings in real time at **UofT Hacks X**, cumulating in real-world experience with working with and building **RESTful APIs** and **SDKs** in **Python** and **JavaScript**
- Coded the web-API with **Flask**, which interfaced with a **Firebase database** that stored text/audio description of images captured by the mobile app that had been generated by **Google Text-to-Speech** and **ChatGPT API**

EXTRACURRICULARS

Project Developer | *Western AI (WAI)*

Sept. 2022 - Present

- Programmed a Spotify-music recommender which suggests songs based on a user's past songs and previous preferences involving hands-on experience with key ML libraries such as **sklearn**, **Jupyter Notebooks**, **Pandas**/Numpy/Matplotlib
- Oversaw the creation of the recommendation system by using the **k-means clustering** AI algorithm through **Sklearn**, creating in a model capable of delivering recommendations based on past user preferences through **Spotify API**
- Optimized model predictions by applying various techniques such as hyper-parameter tuning and model evaluations using metrics such as the **Davies-Bouldin index** and **Dunn index** leading to better clustering and overall model performance

Junior Analyst | *Global Research Council (GRC)*

Sept. 2022 - Present

- Consulted with an international non-profit on **environment social governance (ESG)** principals by conducting a three-month research and deliberation process alongside organizing an event for an ESG conference involving guest speakers
- Spearheaded efforts in **researching contemporary green practices** for a client in areas such as carbon offset and locating alternative "green" sponsors/grants to **diversify client's funds** to meet client-set sustainability goals