

Samuel Xu

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<https://samuelxu.github.io/about>

Education

University of Waterloo - Bachelor of Mathematics

SEP 2017 - AUG 2022

Computational Mathematics, Honors

Pure Mathematics Minor, Statistics Minor

Recent Projects

NASA Algal Bloom Challenge - top 3%

Pytorch, Huggingface, Boosting Algorithms

- Finished **#34 out of 1377** participants in the NASA Harmful Algal Bloom Detection challenge
- Developed a robust and efficient end to end pipeline for satellite download, feature extraction, augmentation, and classification of lake imagery at **over 20000 data points** across the US

Xeek Crossplots Challenge - finalist

Pytorch, Huggingface

- Finished **#10 out of 69** participants in the Xeek Crossplot Marker Detection Challenge
- Developed a pipeline for detecting graph marker positions relative to their coordinate axes

Experience

Replicant AI - NLP - Machine Learning Intern

Toronto ON, SEP 2021 - DEC 2021

- Developed an intent discovery model using **Pytorch** and **Huggingface** hosted on **GCP**, cutting **~10 hrs/week** in manual intent discovery work, effectively saving **~\$15,000/year**.
- Developed audio fuzzer using **NodeJS** and **SQL** by passing clean audio through a phone line, generating **50+ GB** of phone-line data for name, email, and numerical recognition datasets

Grand River Hospital - COVID Screener

Waterloo ON, JUN 2020 - AUG 2020

- Screened people entering the hospital for signs of COVID-19, and ensured proper PPE coverage

Huawei Technologies - Software Engineer Researcher

Waterloo ON, JAN 2019 - APR 2019

- Development of **data visualization** suite in **ReactJS** and media **compression algorithm** in **C++**, rivaling **PNG** and **JPEG** in image compression quality
- Developed data analysis tool in **Python** which visualized the above algorithm

Autokroma - Software Developer

Remote, MAY 2018 - AUG 2018

- Tweaked Google Spatialmedia Suite on Github for 360-degree video mapping using **Python**
- Developed visualizer for Adobe Plugin using **VueJS**

Splice Digital Ltd - Software Developer Intern

Windsor ON, MAY 2018 - AUG 2018

- Developed applications for various clients, mainly using **Wordpress**, **PHP** and **SQL**

WeLance Studios - Software Developer Intern

Remote, MAY 2016 - AUG 2017

- Developed a range of Web Applications using **NodeJS**, **ReactJS**, **MongoDB**, and **ExpressJS**
- Developed **Android** Application in **Java** for Waterloo-based Delivery Dispatching company

Technical Skills

- **Programming** in Python, Jupyter Notebooks, Matlab, R, C, C++, Java
- **Experience working with** Pytorch, Tensorflow, pandas, numpy, data analysis, statistical modelling