

# Bill (Yuan Hong) Sun

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## EXPERIENCE

### KINAXIS | MACHINE LEARNING ENGINEER

Feb 2022 - Present | Toronto, ON / Ottawa, ON

- Worked in an Agile / Scrum environment with cross-functional teams.
- Implementing and productionalizing dynamic machine learning models in retail and supply chain demand forecasting using Python and Luigi.
- Writing and taking ownership of production code for machine learning modules and pipelines.
- Improving and scaling machine learning pipelines and data infrastructure to allow for new customer data to be run.
- Designed and implemented new machine learning modules / workflows.
- Helping to integrate machine learning into the RapidResponse app.
- Leading multiple Scrum ceremonies and team meetings.
- Helping to interview candidates for machine learning positions.

### NURALOGIX | DATA SCIENCE SOFTWARE DEVELOPER

May 2019 - Aug 2020; Jul 2021 - Jan 2022 | Toronto, ON

- Worked in an Agile environment; involved in both development and research work with multiple interdisciplinary teams.
- Developed multiple internal tools and pipelines in Python and Jenkins to automate and improve data processing.
- Simplified access to the DeepAffex cloud by developing an open-source Python API package.
- Developed a **full-stack web application** for testing survey-based machine learning models. Includes a microservice back-end (using AWS Lambda), a Flask front-end, and PostgreSQL database.
- Helped prepare multiple customer demos of proof of concept products.
- Supervised three undergraduate research interns.

### UNIVERSITY OF TORONTO | RESEARCHER & TEAM LEAD

Toronto, ON | Sep 2020 - Present

- Working with Dr. **Kang Lee** to develop machine learning methods for assessing various mental and physical health conditions.
- Leading the machine learning work at the lab. Supervising undergrad research students on machine learning and data analysis projects.
- Written and first-authored several publications in psychology and health journals and conferences (see "Publications").

## PROJECTS

### VACCINE SENTIMENT DASHBOARD | CO-DEVELOPER

Sep 2020 - Dec 2020 | Public Health Ontario

- Applied NLP techniques to develop a sentiment model that detects Tweets containing misinformation on vaccines.
- Developed an **interactive dashboard** and a data pipeline in Python Flask, Dash, PostgreSQL, and Heroku that scrapes and analyzes new Tweets daily and displays vaccination misinformation statistics.

### MUSIC GENRE CLASSIFIER APP | CO-DEVELOPER

Sep 2018 - Jan 2019 | University of Toronto

- Multiclass music genre classification utilizing convolutional neural networks (CNNs) and recurrent neural networks (RNNs) from PyTorch.
- Developed a Flask **web demo** that samples audio from a YouTube link.

## EDUCATION

### GEORGIA TECH

MSC IN COMPUTER SCIENCE

MAJOR IN COMPUTING SYSTEMS

Sep 2022 - Jun 2024 (Expected)

### UNIVERSITY OF TORONTO

BASC IN ENGINEERING SCIENCE

MAJOR IN MACHINE INTELLIGENCE

MINOR IN ENGINEERING BUSINESS

Sep 2016 - Jun 2021

## SKILLS

### PROGRAMMING

Python • Java • SQL • C/C++

HTML/CSS/JavaScript • R • MATLAB

### FRAMEWORKS / LIBRARIES

Numpy • Pandas • PyTorch • Airflow

TensorFlow • Scikit-learn • XGBoost

Dash • NLTK • Flask • JWT • jQuery

### OTHER TECHNOLOGIES

Git/GitHub • AWS • Azure • Docker

Heroku • Atlassian toolkit • Databricks

Linux / Unix • Kubernetes • REST / gRPC

API / Microservices • Machine learning

Deep learning / Neural networks • NLP

## PUBLICATIONS

- [1] S. Liu, Y. H. Sun, A. A. Waese-Perlman, N. Y. Lee, H. Zhang, and K. Lee. Symptom based detection models of covid-19 infection using ai. In Y. Eldar and N. Lidströmer, editors, *Artificial Intelligence in COVID-19*. Springer Nature, 2022.
- [2] Y. H. Sun, Q. Liu, N. Y. Lee, X. Li, and K. Lee. A novel machine learning approach to shorten depression risk assessment for convenient uses. *Journal of Affective Disorders*, 2022.
- [3] Y. H. Sun, H. Luo, and K. Lee. A novel approach for developing efficient and convenient short assessments to approximate a long assessment. *Behavior Research Methods*, 2022.
- [4] Y. Yasin, Y. H. Sun, and K. Lee. A machine learning approach for predicting children's future bmi. In *Canadian Developmental Psychology Conference*, 2022.