

Bill (Yuan Hong) Sun

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EXPERIENCE

NURALOGIX | DATA SCIENCE SOFTWARE DEVELOPER

May 2019 – Aug 2020; Jul 2021 - Present | Toronto, ON

- Worked in an Agile environment; involved in both development and research work with multiple interdisciplinary teams.
- Developed a **full-stack web application** for testing survey-based machine learning models. Includes a microservice backend (using AWS Lambda), a Flask frontend, and PostgreSQL database.
- Supervised an undergraduate research intern for his work.
- Helped build a ML-based COVID-19 assessment tool.
- Developed an open-source Python API interface to simplify access to the DeepAffex cloud, utilizing REST API, WebSocket, and gRPC. Wrote an open-source program that shows use cases for the API and SDK.
- Developed a Python GUI application using QT, along with a Jenkins pipeline that automated video data processing.
- Developed machine learning models to predict mental health conditions.

PUBLIC HEALTH ONTARIO | DATA ENGINEER INTERN

Sep 2020 – Dec 2020 | Toronto, ON

- Applied NLP techniques to develop a sentiment analysis model that detects Tweets containing misinformation on vaccines. The model achieves over 80% test accuracy on 3-class sentiment.
- 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 by location, time, and users.

TRAVEL MODELLING GROUP | DATA SCIENCE RESEARCHER

May 2017 – Aug 2017 | Univ. of Toronto Transportation Research Institute

- Analyzed datasets of simulated paths from public transit path choice modelling of the Greater Toronto Area.
- Developed fitness functions in Python for path comparison. Improved efficiency by implementing data structures.
- Results were used to improve a machine learning prediction model.

PROJECTS

UNDERGRADUATE THESIS | A NOVEL APPROACH FOR DEVELOPING EFFICIENT AND CONVENIENT SHORT ASSESSMENTS TO APPROXIMATE A LONG ASSESSMENT

Sep 2020 – Apr 2021 | Ontario Institute for Studies in Education

- Worked with Prof. **Kang Lee**. Pending for *Behavior Research Methods*.
- Applied various machine learning techniques to predict the likelihood of anxiety disorder from a user survey, with over 90% accuracy.

MUSICGENRE | 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.
- Achieves 87% test accuracy in 4-class classification.
- Constructed an audio dataset using the Spotify and YouTube APIs.
- Utilized feature engineering techniques to process raw audio.
- Developed a Flask **web demo** that samples audio from a YouTube link.

EDUCATION

UNIVERSITY OF TORONTO

BACHELOR OF APPLIED SCIENCE IN ENGINEERING SCIENCE

MAJOR IN MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

Sep 2016 – Jun 2021 | Toronto, ON

Final year GPA: 3.85 / 4.0

Dean's List Honours

SKILLS

PROGRAMMING

Proficient:

Python • HTML/CSS/JavaScript

Familiar:

C/C++ • SQL • R • MATLAB • Java

FRAMEWORKS / LIBRARIES

Numpy / Scipy • Pandas • PyTorch
TensorFlow • Scikit-learn • XGBoost
Dash • NLTK • Flask • JWT • jQuery

OTHER TECHNOLOGIES

Git/Github • AWS • Linux • Docker
Heroku • Atlassian toolkit • Serverless
Databases • Jenkins • REST / gRPC
API / Microservices • Machine learning
Deep learning / Neural networks • NLP

COURSEWORK

Thesis • Capstone Project
Neural Networks and Deep Learning
Artificial Intelligence
Methods of Data Analysis
Probabilistic Reasoning
Engineering Design • Robotics Design
Economics • Marketing • Management

EXTRACURRICULAR

Toastmasters Competent Communicator
Engineers Without Borders
Institute for Leadership Education in Engineering (iLead)
Blue Sky Solar Car Racing Team
Fellowship of Young Buddhists Toronto

LINKS

Github:// [billyhsun](#)

LinkedIn:// [bill-yuan-hong-sun](#)

Portfolio:// [billyhsun.github.io](#)