


Bill (Yuan Hong) Sun

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 github.com/billyhsun
billyhsun.github.io/portfolio

Education

University of Toronto, Faculty of Applied Science and Engineering
B.A.Sc. Candidate in Engineering Science,
Major in Machine Learning & Artificial Intelligence

Toronto, ON
Sep. 2016—Jun. 2021
(Expected)

Skills

- **Programming Languages:** Python, Java, C, C++, JavaScript, HTML/CSS, SQL, MATLAB, SAS, and Verilog
- **Machine Learning:** PyTorch, TensorFlow, Scikit-learn, Pandas; Deep learning and neural networks
- **Other Technologies:** Git/GitHub, Amazon Web Services, Google Cloud, ReactJS, NodeJS, MongoDB, Arduino

Work Experience

University of Toronto Transportation Research Institute

Research Assistant, Data Analyst—Transportation Modelling Group (Prof. Eric J. Miller)

May—Aug. 2017

- Analyzed path data from transportation path choice modelling of the Greater Toronto Area
- Developed Python programs to parse, analyze, and compare transit path data sets
- Implemented data structures including tries to optimize data processing
- Results were used to improve a machine learning prediction model by over 20% accuracy
- Research was useful in forecasting future transit demand

(A report is
available on
GitHub)

Projects / Volunteering

Music Genre Classifier—Deep learning project

Oct.—Nov. 2018

- Utilizes deep learning and convolutional neural networks to identify the genre of a piece of music by training on music audio and their genre labels; training on Google Cloud
- Original data collection using Spotify API and data scraping / manual collection
- Uses Mel-frequency transform and feature engineering to pre-process raw music audio
- Achieves over 80% test accuracy; includes a UI that samples audio from YouTube

Identifying mobile phone gestures through gyroscope data—Deep Learning project

Oct. 2018

- Utilizes deep learning and convolutional neural networks to process gyroscope data
- Built and created own dataset based on data collected in class
- Achieves 85% accuracy in identifying different phone movements

Gospel China Bridge—Content hosting and streaming application

May 2018—Present

- Using React Native with Node.js; connected to content hosted on HTTP server
- Allows users, to stream, watch, or listen to Sunday sermons in audio and video format
- User interface to help users manage downloads locally
- Includes work contribution on an open-source React media player during implementation

Awards and Achievements

- AWS Certified Solution Architecture - Associate
- U of T Delta Tau Delta Scholarship (Amount: \$3000)

In Progress
October 2016

Interests

Hackathons, weather & climate, earth sciences, Engineers Without Borders, travelling, swimming, fitness, social causes