GRACE WU

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EDUCATION

University of Toronto *2018 - 2022*
BASc. Engineering Science - Machine Intelligence Major
Relevant Courses: Data Structures and Algorithms, Calculus I & II & III, Probability and Statistics, Intro to Databases, Foundations of Computing, Systems Software, Intro to Machine Learning, Artificial Intelligence

SKILLS

Python, C, C++, SQL, R, Java, HTML/CSS, Tensorflow, PyTorch, MATLAB, Linux, GIT, AWS

EXPERIENCE

Princess Margaret Bioinformatics and Computational Genomics Lab September 2020 - Present
Machine Learning Research Student Toronto, ON
· Creating machine learning model to predict drug response from gene expression using cancer cell line data.
· Developing R script to leverage text mining as a way to identify relevant biomarkers for feature selection.

King Mongkut's University of Technology Thonburi June 2020 - August 2020
Machine Learning Research Student - part of the ESROP Program *Bangkok, Thailand (Remote)*
· In a team of 3, created and trained a CNN to identify COVID-19 from chest x-rays using Tensorflow under the supervision of Prof. Jonathan Chan with an accuracy of 98%. Wrote a paper accepted to the CSBio 2020 conference.
· Used Grad-CAM to analyze results of models trained to identify Diabetic Retinopathy from images of the retina.

Cognitive Systems Corp May 2020 - August 2020
Software Developer Coop on the Platform Team *Waterloo, ON*
· Using C and Python with Pytest, developed a method to simulate a motion network with any number of connected nodes for load testing of system features like memory and CPU. Automated testing protocol and data reporting.
· Developed a custom code profiler in Micropython for embedded runtime optimization.
· Built a data pipeline to transfer real-time motion data into AWS for query and analysis. Improved scalability of previous stack to withstand load of more than 20,000 devices. Used Logstash, S3, Lambda, Glue, Athena.

Ontario Ministry of Health May 2019 - August 2019
Data Science & Developer Intern *Toronto, ON*
· Developed a Python application to detect and report on hospital data inconsistencies for over 400 Ontario hospitals from Oracle Database. Improved accuracy of previous script by over 30%.
· Created PL/SQL, SAS and VBA procedures to automate annual analysis and reporting of hospital data.

PROJECTS

AUToronto September 2019 - Present
GUI & Navigation Team
· Implemented motion planning algorithm in Python and C++ for the vehicle by creating a state lattice architecture and running graph searches.
· Optimized GPS location query syntax using Python and PostgreSQL.
· Implementing vehicle path visualization using ROS, Python and Flask to connect to Javascript frontend.

Toxic Comment Classifier December 2020
· Participated in the Kaggle Google Jigsaw Toxic Comment Classification challenge, achieving 95% accuracy.
· Created a CNN & LSTM model with Pytorch to classify input comment with various labels of toxicity, to enforce productive discourse on online discussion platforms.

CURRENT EXTRACURRICULARS

NSight Student Mentor, Varsity Newspaper Illustrator, Artwork displayed in galleries in Toronto and London, UK