# 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 Machine Intelligence, Foundations of Computing, Matrix Algebra and Optimization, Computer Systems

## SKILLS

**Languages and Tools:** Python, C, C++, SQL, R, Java, 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 cell line data.
- Developing R script to leverage text mining as a way to identify relevant biomarkers for feature selection.

**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.
- Implemented a custom code profiler in Micropython.
- Built a data pipeline to transfer real-time motion data into AWS for query and analysis for more than 20,000 devices. Used Logstash, S3, Lambda, Glue, Athena.

**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 the results of various models trained to identify Diabetic Retinopathy from retina images under the supervision of Prof. Praisan Padungweang.

**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 for annual analysis and reporting of hospital data.

## PROJECTS

**AUToronto** September 2019 - Present
*GUI & Navigation Team*

- Optimized GPS location query algorithm of an autonomous vehicle using Python and PostgreSQL
- Implemented motion planning algorithm in Python and C++ for the vehicle through creating a state lattice architecture and running graph searches
- Investigating the implementation of AVS for visualization

**Autonomous Car Charger (Course Project)** January 2020 - April 2020

- Using computer vision through Python and OpenCV, wrote a program to identify the location of a vehicle charge port from a photo with 90% accuracy to autonomously insert a charge plug.

## CURRENT EXTRACURRICULARS

NSight Student Mentor, The Varsity Newspaper Illustrator