Brandon Oscar Shew

647-267-2454
brandonshew98@gmail.com
https://github.com/BrandonO-98

EXPERIENCE

University of Toronto- *Biophysics Researcher*

July 2020 - Sept 2021
- Used Molecular Dynamics software (Gromacs) via SSH to simulate proteins in explicit solvents.
- Scripted programs in Python and MATLAB to analyze large protein data sets containing information on conformational space, dynamics, and observables.

Credit Valley Hospital- *Physics Associate Intern*

September 2019 - April 2020
- Shadowed varying health professionals in the medical physics stream to gain an understanding of specific roles and physics incorporation in the healthcare environment.
- Created a database in VBA to track the status of equipment used by medical physicists in the hospital setting.

University of Toronto- *Undergraduate Climate Physics Researcher*

September 2019 - April 2020
- Processed meteorological and hydrological data using Python via accessing a high-performance computing facility (e.g. UTM clusters).
- Installed and ran hydrological models (e.g. Aquanty's HGS, Environment Canada's MESH model, Waterloo's WATFLOOD).

University of Toronto- *Undergraduate Biophysics Researcher*

May 2019 - September 2019
- Enhanced the UTM MATLAB built program for analyzing photo-bleaching data.
- Compared MATLAB and C++ algorithms of change-point detection.
- Performed wet-lab experiments to compile data for photo-bleaching analysis.

University of Toronto- *Teaching Assistant*

Sept 2019 - April 2022
- Created appropriate lesson/tutorial plans and assessments to guide and gauge the learning of students enrolled in both first and second year physics.
- Provided constructive feedback for improvement on how to conduct and explain research observations in the undergraduate laboratory.
- Supervised midterm and final exam/assisted in the marking process.

Programming languages

Python (Data Analysis/Simulation)

MATLAB (Data/Analysis)

C++ (Data Analysis/Simulation)

JavaScript (ES6 and React)

HTML/CSS (TailWind)

EDUCATION

University of Toronto- *HBSc*
Physics and Mathematics

University of Toronto- *MSc*
Physics and Computer Science

Publications

Garry, Jon & Li, Yuchong & Shew, Brandon & Gradinaru, et Al. (2020). Bayesian counting of photobleaching steps with physical priors.