Siu Kai Cheung, Civil Engineering Student

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PROFILE

Passionate civil engineering student with 2 years of industry experiences who is enthusiastic about solving global challenges. Strive to build a sustainable future with resilient and data-driven infrastructure design.

EDUCATION

Sep 2018 — May 2023

Bachelor of Applied Science, University of Toronto — Toronto

Major in Civil Engineering | Minor in Engineering Business | Artificial Intelligence Certificate

CGPA 3.86 | Dean's Honour List

Courses: Artificial Intelligence Fundamental, Steel and Timber Design, Reinforced Concrete, Urban Transportation System, Engineering Economics, Municipal Engineering, Civil Engineering Graphics

EMPLOYMENT HISTORY

May 2021 — Present

Track and Structure Engineering Intern, Toronto Transit Commission (TTC) — Toronto

- Designed and analyzed steel posts at platform level in accordance with CSA S16-14 Standard
- Compiled structural layout drawings for Bayview Station using Microstation
- Calculated soil cover depths for underground tunnel structures
- Communicated with contractors through providing engineering drawings and locates on ON1Call
- Inspected existing structural components of Prince Edward Viaduct Bridge

May 2020 — Aug 2020

Geomechanics Assistant, Rocscience Inc. — Toronto

- Researched and implemented novel computational methods of pile load capacity; enhancing new features in the compute engine in C++
- Tested new features with verification models generated in Excel and VBA
- Delivered full product features in 2 months through effective productivity and self-learning

EXTRA-CURRICULAR ACTIVITIES

Sep 2020 — Present

Senior Design and Analysis Lead, UofT Seismic Design Team — Toronto

- Designed and analyzed a 19-storey seismic-resilient and cost-effective hospital with a team of 22 engineering students; ranked 3 out of 37 in the 2021 Seismic Design Competition
- Researched and implemented new Center of Rigidity formulations for high-rise buildings in Python; effectively reducing the torsional effects by 35%
- Design and develop the code structure of the Graphical User Interface for the in-house automation application using Qt framework; accelerating the development process through object-oriented design

Sep 2020 — May 2021

Engineering Campus Experience Officer, University of Toronto — Toronto

- Generated events and workshops with a student-led team to build an inclusive student community
- Documented the event engagement and participation for future improvement
- Mentored students in their academic studies and mental development

PROJECTS

Sep 2021 — Dec 2021

CropFigures - Figure Detection in PDFs, Course Project — Toronto

- Trained a deep learning CNN model in PyTorch with novel datasets; achieved an average precision of 97%
- Built a desktop app using the Qt Framework and the trained model to detect and extract figures from PDF

Mar 2021

Vision0 - Pedestrian Crossing Safety Solution, DeltaHack VII — Toronto

- Designed a signalized intersection that reacts to real-time pedestrian and vehicle flows using OpenCV and pretrained YOLOv5 CNN model
- Built a fully functional prototype using PyQt within 36 hours

SKILLS

Python - PyQt, PyTorch, Django

C++

Excel VBA

CAD - AutoCAD/Microstation