

**Projects \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Concrete Neural Network**

*TensorFlow & Python*

[Jun 2017 – Present]

A deep GAN neural network trained to generate concrete mixes for desirable tensile and compressive strength of resulting concrete.

**FlashMemorizeDroid**

*Android Studio & Java*

[Oct 2018 – Present]

An Android application capable of taking lines in a text document separated by tabs and generate a deck of flashcards from it. The program offers various card-shuffling methods and tracks user record.

**SaveMii**

*Android & Google Cloud API*

[Jan 2019 – Present]

**Winner of 2019 Waterloo EngHack Best Use of Google Cloud Platform.** A personal heath monitoring app designed for people with severe allergies. Identify potential allergy sources from photos taken, send out warnings and store the record in the cloud.

**C++ Neural Network**

*C++*

[Jan 2019 – Present]

A simple neural network model written in C++ capable of recognizing MNIST dataset.

**Experience \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ambient Air Data Analyst** *Environment and Climate Change Canada*

[Apr 2018 – Sep 2018]  
Managed National Air Quality Surveillance Program Data base in SQL Server and developed custom data analytics software using a combination of R, MatLab, SQL and VBA. Migrated data from MS Excel and MS Access database to the NAPS SQL database. Assisted in redesigning the NAPS Web Portal to support real-time data updates and interaction.

**Agile Web Project Coordinator**

*QingPath Inc.*

[Jan 2017 – Apr 2017]  
Agile Web Development for community-centric small businesses with Mobile-First development concepts in mind. Worked on projects built using Bootstrap framework with html5, CSS3 and JavaScript. Performed cross-browser QA testing and debugging and communicated with clients for project details and specification.

**Engineering Student**

*Township of South Frontenac*

[Sep 2017 – Dec 2017]  
Created a traffic data management system using VBA and Google Maps API. Hooked the software to AutoCAD Civil 3D using VisualLisp for real-time update on the system. Also created other tools and softwares using VBA and Python as requested by the Township staff.

timgu.me

**Skills \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Programming**: C++, Python, Qt5 | **Web**: Html5, CSS, JavaScript, SQL Server |
| **Mobile**: Java, Android Studio | **Data Science**: Tensor Flow, MatLab, R, VBA |
| **Hardware**: VHDL, Verilog |  |

TIM GU

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**The University of Waterloo Computer Engineering 2022**

**Extracurricular\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**UW WATonomous Design Team**

*Core Member. Data Processing*

Responsible for high level image-sensor datastream fusion.

**UW Concrete Toboggan and Canoe Team**

*Core Member. Software Advisor.*

Competed in GNCTR and CNCCC 2018. Created the Concrete Neural Network to help with concrete mix design. Co-developed a Rhino3D add-on using Grasshopper and Python for integrated hull design and hydrodynamic calculations. Also responsible for the team website maintenance.