

EDUCATION

University of British Columbia

BASc, Electrical-Biomedical Engineering

Minor in Physics

Cumulative GPA: 3.9

Year 3, expected May 2022

Tsinghua University

International Exchange

Tomorrow's Youth Track

August 2018

AWARDS

July 2019

NSERC Undergraduate

Student Research Award

September 2018

Trek Excellence Scholarship

for top 5% standing in

Faculty of Applied Science

June 2017

Tuum-Est Experiential

Award for upcoming

undergraduate students

April 2017

15th nationwide on Canadian

Association of Physicists

Exam

INTERESTS AND ACTIVITIES

Astronomy

UBC Badminton Club

Ultimate intramurals

Bodyweight fitness

Piano

Travelling

Experiencing new cultures

TONY XU

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SKILLS

LANGUAGES: Python, C, MATLAB, JavaScript

DEEP LEARNING: PyTorch, CUDA, Keras/TensorFlow, scikit-learn, Pandas

EXPERIENCES

SUMMER RESEARCH STUDENT

Sunnybrook Research Institute – Physical Sciences | May 2019–August 2019

- Used deep learning and computer vision techniques to analyse digitized breast cancer slide images for cancer detection and classification with **PyTorch**
- Innovated cancer detection pipeline, achieved **91% accuracy** on slide-level segmentation
- Preprocessed using “tissue classifier” network to distinguish important cellular regions, improving accuracy of **overall pipeline by 5%**
- **3rd place** on 470-participant breast histology competition: BreastPathQ

MACHINE LEARNING TECHNICAL LEAD and ELECTRICAL DESIGNER

UBC Biomedical Engineering Student Team (BEST) | October 2018–present

- Lead of the Multifaceted Innovations in NeuroTechnology (MINT) project ML subteam
- **3rd place** in NeurotechX student competition for creating and designing home-made EEG
- Working to create a user-centric EEG controlled home automation application

TEACHING ASSISTANT

UBC Department of Mathematics | September 2019–present

- Grading and tutoring differential calculus course with **high TA involvement**, focused on developing logical and grammatical coherence on top of mathematical competence

TECHNICAL PROJECTS

Doggin’ Dog GAN | July 2019–August 2019

- Created a network making fake dogs using Stanford Dogs dataset with an encoding model to apply eccentric GAN-like features to a real dog image; “gannifying”
- Worked on **Python** backend, DCGAN model created with PyTorch
- Designed frontend with **React**, contained everything in Docker, deployed online with AWS

Music Genre Classifier | February 2019–April 2019

- Designed and trained neural network using **Keras** to classify genre of any song
- Optimized hyperparameters (learning rate, momentum, network depth) with GridSearchCV

Doctor Christina | January 2019

- nwHacks project creating voice-activated communication device for sterile environments
- Implemented voice activation, speech-to-text, and data transfer using **Python** back-end