

winnie xu

+1-647-939-1869

winnie.xu@mail.utoronto.ca

linkedin.com/in/winnie-xu

github.com/xwinxu

SKILLS

DATA SCIENCE | Python, Numpy, R,
Bash, Scikit-Learn, C(basic), Jupyter,
Bedtools, TensorFlow (basic),
Segway/Segtools

DEV | HTML/CSS, Java, Javascript
(basic), Django, Android Studio,
Git/Mercurial, Linux

CREATIVE | OpenSCAD,
Fusion360, Sketch, Adobe
Illustrator, PowerPoint

AWARDS

1st Place + Axelrad Award for Best
Cancer Project at Princess Margaret
Cancer Research Tower | 2018

Medical Biophysics Research
Studentship for exceptional
undergraduate research | 2018

British Columbia Provincial
Achievement Scholarship | 2018

Silver Medal + Top 20 at Canada
Wide Science Fair | 2017

1st Place Honours at Sanofi
Biogenius Challenge | 2017

EDUCATION

UNIVERSITY OF TORONTO

HON.B.SC COMPUTER SCIENCE, STATISTICS & MATH

Class of 2021

3.89/4.0

- **CS Core:** Software Design, OOP, Computer Theory, Algorithms, Data Structures
- **Life Science (2017-18):** Evolution, Probability Theory, Chemistry, Genetics

WORK EXPERIENCE

COMPUTER SCIENCE RESEARCH ASSOCIATE 2018-Present

MARS MEDICAL DISCOVERY TOWER

- Used **computational biology** pipelines + semi-automated genome annotation algorithm (SAGA) **Segway** to **validate** statistical models synthesized from over **20 biological datasets** & to cross-analyze **2** new sequencing methodologies
- Applied **machine learning** on high resolution genomic datasets from **5 cancer states**, improved prediction + annotations of **epigenetic modulators** by **60%**

BIOMEDICAL ENGINEERING RESEARCH INTERN 2017-18

UNIVERSITY OF TORONTO

- Automated manufacturing of innovative **cancer drug screening tissue interface** device, tested **5 3D printing pen tip materials**, decreased manual fabrication time by **50%** & improved biomaterial deposition by **50%**
- Contribution to **publication under review** in high impact journal

BIOTECHNOLOGY RESEARCH INTERN

2016-17

UNIVERSITY OF BRITISH COLUMBIA

- Optimized *in vitro* & *in vivo* protocols to accelerate experiment times by **40%**
- Characterized novel roles of **Podocalyxin** protein, **confirmed** an **80% structural** contribution in maintaining **blood-brain-barrier** integrity
- Contribution to **research paper under review** for publication
- **1st Place** Sanofi Biogenius, **6th Place** National Biogenius, **ISEF Semi-Finalist**

RECENT PROJECTS

MACHINE LEARNING PROJECT ASSOCIATE

2018

UNIVERSITY OF TORONTO MACHINE INTELLIGENCE STUDENT TEAM

- Co-lead **ICLR Reproducibility Challenge** & **deep reinforcement learning** team

SOCIALBIT

HackMIT 2018

- Web application that streams live video from **Raspberry Pi** camera along with object detection algorithms from **OpenCV** & **dlib (Python)** to intelligently display daily social interactions at the micro-scale in real time using **D3.js**

SEMI-AUTOMATED MUSCLE FIBRE ANALYSIS

2018

- **ImageJ macros** to quantify muscle stem cells in confocal microscopy images
- Complementary automated Excel analysis tool with GUI using **Python** & **Java**

OCCUBOT

Hack the North 2018

- Web application built with **Flask** + **HTML/CSS** to interface facial and limb recognition algorithm with **OpenCV** to tally room occupancy from live video

3D PRINTED MEDICAL DEVICES

2017-Present

- Prototyped **4** user-centric assistive devices using **OpenSCAD** + **Fusion360**

COMMUNITY

ASSOCIATE DIRECTOR OF EVENTS

2018

UNIVERSITY OF TORONTO CONSULTING ASSOCIATION

- Launched new **Tech Consulting Series** with Deloitte & PwC, **120+** attendees

CONFERENCE CHAIR

2017

OPERATION MED SCHOOL

- **350+** attendees, **1.5K+** net profit, featured on **CBC** + **The Globe and Mail**