winnie xu

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in linkedin.com/in/winnie-xu

○ github.com/xwinxu

SKILLS

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

DEV | HTML/CSS, Java, Django, Javascript, Android Studio, Git/Mercurial, Linux, HPCC

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

Genome BC Award & Scholarship for best genomics project | 2017

EDUCATION

UNIVERSITY OF TORONTO (St. George)
Class of 2021
3.88/4.0

HON.B.SC COMPUTER SCIENCE, STATISTICS & MATH

- **CS Core:** Software Design, Object-Oriented Programming, Computational Theory, Algorithms, Data Structures, Linear Algebra, Machine Learning (audit)
- **Life Science (2017-18):** Evolution, Probability Theory, Chemistry, Genetics

WORK EXPERIENCE

COMPUTER SCIENCE INTERN
2018-Present

MARS MEDICAL DISCOVERY TOWER, MACHINE LEARNING GROUP

- Used **bioinformatics** pipelines in **Python**/**C**, **bash** scripting + **semi-automated genome annotation algorithm Segway** to **validate** statistical models synthesized from **20+** **biological datasets** & cross-analyzed **2 new** ChIP-sequencing methods
- Applied **machine learning** on high resolution genomic datasets from **5 cancer states**, improved epigenetic modulator predictions + **genome annotations** by **60%**

BIOMEDICAL ENGINEERING RESEARCH INTERN
2017-18

UNIVERSITY OF TORONTO, IBBME

- 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%**, semi-automated image analysis
- Contribution to **publication under review** in high impact journal w/ **ImageJ** data

BIOTECHNOLOGY RESEARCH INTERN
2016-17

UNIVERSITY OF BRITISH COLUMBIA, MEDICINE

- 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

MIRROR DIAGNOSTICS, Co-Founder
2018-Present

- **Top 15** Queen's Entrepreneur's Competition; early breast cancer detection service

MACHINE LEARNING PROJECT ASSOCIATE
2018

UNIVERSITY OF TORONTO MACHINE INTELLIGENCE STUDENT TEAM

- Co-lead for ICLR Challenge, implemented initialized equilibrium propagation training algorithm for **deep neural net learning** using **PyTorch & NumPy**

SOCIALBIT
HackMIT 2018

- Live video stream from **Raspberry Pi** camera + **OpenCV/dlib (Python) facial recognition processing** to show daily social interactions at the micro-scale w/ **D3.js**

2048, Sliding Tiles, Flipping Cards
2018

- Built in **Android Studio;** sign-in, load-saved, undo, timer, modern UI, leaderboard

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

COMMUNITY

ASSOCIATE DIRECTOR OF EVENTS
2018

UNIVERSITY OF TORONTO CONSULTING ASSOCIATION

- Launched new **Tech Consulting Series** with Deloitte & PwC, **120+** attendees
- Pro-bono consulting project and case preparation group coordinator

CONFERENCE CHAIR
2017

OPERATION MED SCHOOL

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