

Edward (Eddie) Guo

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EDUCATION

University of Alberta | Edmonton, AB **Sep. 2020 – Present**
Bachelor of Science in Engineering (GPA: 4.00/4.00)

University of Alberta | Edmonton, AB **Sep. 2018 – Apr. 2020**
Bachelor of Science Honors Neuroscience (GPA: 4.00/4.00)
Transferred to the Faculty of Engineering at the University of Alberta

EMPLOYMENT

Undergraduate Teaching Assistant **Sep. 2020 – Present**
Introduction to Tangible Computing I & II (CMPUT 274/275) | University of Alberta

- Helping students understand programming concepts during office hours and lectures.
- CMPUT 274/275 is the honors stream of introductory CS and Computer Engineering courses at the University of Alberta. Topics include introductory programming, data structures, and algorithms in Python and C++.

Undergraduate Research Student **Oct. 2018 – Oct. 2021**
Zochodne Lab | Li Ka Shing Center for Health Innovation, Edmonton, AB

- Researching the effects of acute and chronic cutaneous denervation on differential mRNA expression in skin keratinocytes.

Fencing Coach **Nov. 2016 – Oct. 2021**
Edmonton Fencing Club | Edmonton, AB

- Taught fencing to children in class sizes ranging from 5-25 students.
- Facilitated demonstrations and open houses.

TECHNICAL SKILLS

Programming: R, Python, C++, Arduino
Markup and Version Control: \LaTeX , HTML, CSS, Git
Design: Fusion 360

VOLUNTEERING

Youreka Canada **May 2020 – Present**
Associate Director of Programs | Youreka Canada

- Leading the Programs Department to curate the national curriculum, which focuses on research and data science for 150+ high school and undergraduate students across Canada each year.
- Authored a [textbook on R programming and data science](#) currently used by 150+ students across Canada.
- Collaborating with the Clark laboratory at the Werklund School of Education at the University of Calgary to develop a multi-year research study of the educational effectiveness of the Youreka program.
- Developing regional talent by training regional academic directors at national teaching sessions.

National Operations Committee Member | Youreka Canada

May 2020 – Present

- Managing national short-term strategy and organizational policy.

Vice President of Academics | Youreka Edmonton

May 2019 – Present

- Lecturing a ten-week program to a cohort of 60 high school and undergraduate students.
- Leading a trainee initiative for promising Vice President of Academics candidates.
- Provided four live video lectures to all Youreka Canada branches (University of Alberta, Calgary, Windsor, Queen's) and created slide sets, worksheets, and Python 3 code on introductory statistics during the COVID-19 pandemic.
- Spearheaded a curriculum bifurcation pilot project for Youreka Edmonton that doubled student enrollment from 30 to 60 students from 2019 to 2020.

Canadian Blood Services | Edmonton, AB

Edmonton NextGen Lifeline Committee

Sep. 2018 – Present

- Recruitment for blood donations and informing the public about blood and stem cell donations.
- Lead developer of a volunteer database framework, digitization and automation of volunteer resources (volunteer contracts, event forms, event data).
- Created a Python 3 Tkinter application that queries and analyzes volunteer contracts from an SQL database.

Vice President Volunteer Resources Committee

Aug. 2020 – Jan. 2021

- Managed volunteer contracts, writing reference letters, and ensuring volunteer accountability.

Stem Cell Board Coordinator

Sep. 2019 – Aug. 2020

- Planned and executed Canadian Blood Services' stem cell events (e.g., patient campaigns) with staff and volunteers. There are typically one or two stem cell recruitment events per month.

PROJECT EXPERIENCE

Electroencephalogram (EEG) Visualizer

Apr. 2020 – May 2020

- The application takes an EEG data stream over a local network and visualizes both the raw and transformed signals in a PyQt5 user interface. The program implements the radix-2 decimation-in-time fast Fourier transform algorithm.

Driving Route Finder

Apr. 2020 – May 2020

- Developed a route finder where the user can indicate a start and end point anywhere in the city of Edmonton using a joystick. A desktop C++ program computes the shortest route possible using either the A* or Dijkstra algorithm and displays it on an Adafruit 3.5" touchscreen display on an Arduino Mega2560.

CERTIFICATIONS

Concepts in Safety Leadership – Engineering

University of Alberta

Jan. 2021

Construction Safety Training System (CSTS 2020) – Fundamentals

Alberta Construction Safety Association

Aug. 2020

Engineering Laboratory Safety Orientation & Training

University of Alberta

Jul. 2020

Fundamentals of Reinforcement Learning

University of Alberta and Alberta Machine Intelligence Institute on Coursera

Mar. 2020

CCAC Training for Animal Users Part II: The Care and Use of the Laboratory Mouse

Jun. 2019

University of Alberta (Research Area: Health Sciences)

CCAC Training for Animal Users Part I: Ethics of Animal Use (IAUTP) May 2019

University of Alberta

Concepts in Biosafety 2018 May 2019

University of Alberta

Laboratory and Chemical Safety 2018 May 2019

University of Alberta

WHMIS 2019 Jan. 2019

University of Alberta

Emergency First Aid Level A CPR and AED Jul. 2018

St. John Ambulance

Diplôme d'études en langues française niveau B1 (translation: French studies diploma level B1) May 2018

Ministère de l'Éducation nationale (translation: Ministry of National Education)

HONOURS AND AWARDS

Louise McKinney Post-Secondary Scholarship Dec. 2019, Sep. 2020

- Awarded on the basis of superior academic achievement (top 1.5-2% of faculty) to students at the University of Alberta who are also Alberta residents.
- Awarded for the 2018/19 and 2019/20 academic terms.

Dean's Honor Roll, Faculty of Science May 2019, Sep. 2020

- Awarded to students at the University of Alberta with a Grade Point Average of 3.5 or higher.
- Awarded for the 2018/19 and 2019/20 academic terms.

Undergraduate Big Data Challenge: Research Excellence Award Jul. 2020

- Project titled "Deep learning transcriptomic model for prediction of pan-drug chemotherapeutic sensitivity."
- Hackathon theme: *Personal and Public Health Decisions in a New Open Data Reality*. 524 participants across Canada and America. See the [manuscript and source code](#).

COVID-19 Data Science Hackathon Post-Secondary Student Award May 2020

- Developed an interactive application using a multivariate regression model to better understand the impacts of age, poverty, income, and population density on the spread of the COVID-19 virus.
- The hackathon was hosted by Alberta Innovates, Cybera, and the Pacific Institute for Mathematical Sciences. 120 individuals and teams competed in the hackathon.
- Media coverage: [University of Alberta story](#) and the [Genome Alberta podcast](#).

Sci5 Outstanding Achievement in Science Scholarship Mar. 2020

- Awarded to 4 well-rounded students with strong academic achievement, extracurricular involvement, and recommendation letters in the Faculty of Science at the University of Alberta.

University of Alberta Undergraduate Scholarship Sep. 2019

- Awarded to students with superior academic achievement.

T4K Undergraduate Leadership Scholarship Sep. 2019

- Awarded to students at the University of Alberta with superior academic achievement who demonstrate leadership through involvement and participation in university or community organizations, sports activities, or cultural activities.

Faculty of Science Undergraduate Scholarship

Sep. 2019

- Awarded to students with superior academic achievement enrolled in the second, third, or fourth year of an undergraduate degree in the Faculty of Science at the University of Alberta.

Sci5 Outstanding Achievement in Science Scholarship

Apr. 2019

- Awarded to the top 5 students in the Faculty of Science at the University of Alberta who also demonstrate exceptional extracurricular activities.

Alexander Rutherford Scholarship

Aug. 2018

- Awarded to high school graduates with exceptional academic standing over all three years of high school.

RESEARCH GRANTS

Alberta Innovates Summer Research Studentship

Apr. 2020

- Grant for summer research project titled “Skin and Nerves: Understanding the dialogue between axons and skin cells to restore sensation.”
- Awarded by the Undergraduate Research Initiative, University of Alberta.

Office of the Provost and VP (Academic) Summer Studentship Award

May 2019

- Grant for summer research project titled “Axon regrowth and plasticity in diabetic neuropathy: the role of growth cone molecules.”
- Awarded by the Faculty of Medicine and Dentistry, University of Alberta.

CONFERENCES

1. Becker, S., Clark, D., Gupta, M., Kannappan, S., Wong, B., Hernandez-Zavaleta, E., & **Guo, E.** (2021, May 29–June 3). *Deepening Undergraduate Student Understanding of Science Inquiry by Reflecting on the Creation and Enactment of a Citizen Science Project* [Paper presentation]. Canadian Society for the Study of Education.