

Edward (Eddie) Guo

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Education

University of Calgary Jul. 2022 – Apr. 2025
Doctor of Medicine (MD)

University of Alberta Sep. 2020 – Apr. 2022
Bachelor of Science, Engineering Physics (Partially completed degree) GPA: 4.00/4.00

- Awarded \$24,000+ for leadership and academic achievements at the University of Alberta
- Awarded \$17,500+ for nerve regeneration and exoskeleton control systems research
- Top of class in English critical analysis, multivariable calculus, and organic chemistry II; SAT Math Level 2: 800/800

New College, University of Oxford May 2021 – Aug. 2021
Study Abroad, Magnetic Resonance Imaging and Stem Cell Engineering First Class Honours

University of Alberta Sep. 2018 – Apr. 2020
Bachelor of Science Honours, Neuroscience (Partially completed degree) GPA: 4.00/4.00

Experience

Telerobotic and Biorobotic Systems Group Sep. 2021 – Present
Research Assistant

- Leading the development of a voice-controlled exoskeleton; users complete tasks 54% faster than using a mobile app; first author among 7 engineers and neuroscientists on an academic paper submitted to the 2022 IEEE IROS Conference
- Designing reinforcement learning algorithms for exoskeletons to personalize the patient rehabilitation process; implemented the state-of-the-art TD3 algorithm on a lower-limb exoskeleton to intelligently detect and set a user's desired walking speed

University of Alberta Sep. 2020 – Apr. 2022
Teaching Assistant, Introduction to Tangible Computing I & II

- Supported a class of 160+ students to understand algorithms and data structures in Python and C++; received an overall effectiveness rating of 93% from anonymized student feedback surveys for the 2020-2021 academic year
- Collaborated with a team of 16 teaching assistants to facilitate course delivery while studying as a full-time student

Zochodne Laboratory, University of Alberta Oct. 2018 – Oct. 2020
Research Assistant

- Studied mouse models of peripheral nerve damage to improve patient outcomes after injury
- Performed mouse sciatic nerve microsurgery, electroporation, immunohistochemistry, co-IP, and Western blot

Edmonton Fencing Club Nov. 2016 – Oct. 2020
Fencing Coach

- Coached classes of 5-25 children and teenagers and engaged their parents about their child's progress
- Gave private lessons, taught strategic fencing thinking, and resolved student conflicts

Volunteering

Engineering Physics Club at the University of Alberta Sep. 2021 – Jun. 2022
Vice President External & Year Representative

- Invited by University of Alberta faculty to align the Engineering Physics curriculum with industry and research needs; engaged multiple stakeholder groups; implemented 2 core classes and 2 electives; preserved the co-op program
- Founded and wrote the [Atom Magazine for Engineering Physics](#); the first issue attracted 300+ readers in 6 countries

Youreka Canada Feb. 2019 – Jun. 2022
Vice President, Department of Programs (May 2020 – Jun. 2022)

- Led a team of 17 PhD, MD, and BSc students to create and deliver the Youreka national curriculum; generating 15,000+ hours of research education for 200+ high school and undergraduate students annually across Canada
- Authored an [interactive e-textbook on R programming and data science](#) used by 400+ students across Canada
- Published an academic paper highlighting student development in Youreka in the Alberta Science Education Journal (2022)

National Operations Committee Member (May 2020 – Jun. 2022)

- Co-led the creation of the first Youreka national financial aid and equity, diversity, and inclusion (EDI) policies; funded all 12 students who applied for bursaries for the 2021-22 program
- Spearheaded the first professional development and pedagogy training for 17 undergraduate teachers across Canada

Vice President of Academics (May 2019 – Jun. 2021)

- Taught a ten-week science program to a cohort of 30 high school and undergraduate students in Edmonton
- Taught all Youreka Canada branches and created slide sets, worksheets, and Python 3 code during the COVID-19 pandemic
- Spearheaded a pilot project for Youreka Edmonton that doubled student enrollment from 30 to 60 students from 2019 to 2020

Undergraduate Research Lead (Feb. 2019 – May 2019)

- Mentored a team of 4 high school students for 4 months about bioinformatics research
- Nominated by my team for the “Best Undergraduate Research Lead” award

Canadian Blood Services

Jun. 2018 – Jan. 2021

NextGen Lifeline Committee Executive

- Coordinated and organized blood donation and stem cell events (e.g., patient campaigns) with staff and volunteers
- Created a software management system for volunteer contracts and event data
- Personally recruited 130+ blood donors and 350+ stem cell donors

Publications and Conferences

1. S. Becker, D. Clark, M. Gupta, S. Kannappan, B. Wong, E. Hernandez-Zavaleta, and **E. Guo**, “More than a Eureka Moment: Undergraduate Students’ Reflective Understanding of Science Inquiry in a Citizen Science Project,” *Alberta Science Education Journal*, vol. 48, no. 1, pp. 22-36, Jun. 2022.
2. **E. Guo**, P. Torabi, D.E. Nielsen, and M. Pietrosanu, “Deep learning transcriptomic model for prediction of pan-drug chemotherapeutic sensitivity,” *STEM Fellowship Journal*, Jan. 2022, doi: 10.17975/sfj-2021-013.
3. S. Becker, D. Clark, M. Gupta, S. Kannappan, B. Wong, **E. Guo**, and E. Hernandez-Zavaleta, “Deepening Undergraduate Student Understanding of Science Inquiry by Reflecting on the Creation and Enactment of a Citizen Science Project,” presented at the Canadian Society for the Study of Education XLIX Annual Conference, Canada, May 30–June 3, 2021.

Research Grants

NSERC Undergraduate Student Researcher Award

Mar. 2022

- Awarded for project titled “Intelligent control of a lower-limb exoskeleton”

Dean’s Research Award

Sep. 2021

- Awarded for project titled “Speech-based locomotion planning for lower-limb exoskeletons”

Alberta Innovates Summer Research Studentship

Apr. 2020

- Awarded for project titled “Skin and Nerves: Understanding the dialogue between axons and skin cells to restore sensation”

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

May 2019

- Awarded for project titled “Axon regrowth and plasticity in diabetic neuropathy: the role of growth cone molecules”

Skills and Certifications

Programming

R, Python, C++, MATLAB, VHDL

Software

Simulink, FMRI Software Library, Git, L^AT_EX, HTML, CSS, R Markdown, Microsoft Office

Skills

Reinforcement learning, research, data science, teaching, curriculum development

Electronics

Arduino, Raspberry Pi, Zybo Z7 FPGA, oscilloscope, digital multimeter, Exo-H3

Certifications

Class 5 Driver’s Licence, WHMIS 2021, Standard First Aid CPR and AED Level C, DELF B1

Honours and Awards

Jason Lang Scholarship

Nov. 2021

- Awarded to Alberta post-secondary students for academic achievements

- Peter Lougheed Scholarship** Sep. 2021
- Awarded to University of Alberta students who demonstrate leadership through involvement in university or community organizations, sports activities, or cultural activities and academic achievement; valued at \$10,000
- 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
- Undergraduate Big Data Challenge Research Excellence Award** Jul. 2020
- Used unsupervised learning, feature selection, and neural networks to predict cancer response to chemotherapies
- Alberta Innovates COVID-19 Hackathon Post-Secondary Student Award** May 2020
- Created an interactive app to model how COVID-19 spreads given age, poverty, income, and population density
 - Media coverage: [University of Alberta Folio article](#) and the [Genome Alberta podcast](#)
- Faculty of Science Undergraduate Scholarship** Aug. 2019
- Awarded to students with superior academic achievement enrolled in the Faculty of Science at the University of Alberta
- Sci5 Outstanding Achievement in Science Scholarship** Apr. 2019, Mar. 2020
- Awarded to 4 well-rounded students with strong academic achievement, extracurricular involvement, and recommendation letters
- Thirst 4 Knowledge Undergraduate Leadership Scholarship** Sep. 2019
- Awarded to University of Alberta students with superior academic achievement who demonstrate leadership through involvement in university or community organizations, sports activities, or cultural activities
- University of Alberta Undergraduate Scholarship** Aug. 2019
- Awarded to students with superior academic achievement at the University of Alberta
- Alexander Rutherford Scholarship** Aug. 2018
- Awarded to high school graduates with exceptional academic standing over all 3 years of high school