Edward (Eddie) Guo

(587) 988-0292 ◇ eguo1@ualberta.ca ◇ linkedin.com/in/eguo1 ◇ tig3r66.github.io

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 – Present
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)

- Leading 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, FMRIB Software Library, Git, LaTeX, 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 Mar. 2020, Apr. 2019
- 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