

# Edward (Eddie) Guo

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## Education

### University of Calgary

2022 – 2025

#### *Doctor of Medicine (MD)*

- Published 15 peer-reviewed manuscripts, 23 abstracts, 3 invited talks; USMLE Step 1 (passed); USMLE Step 2 CK (scheduled)
- Awarded grants from OpenAI, Microsoft, and University of Calgary to develop large language model platforms for medical education and clinical practice; awarded Dutkevich Memorial Trust Award for Neuropathology elective rotation performance

### University of Alberta

2020 – 2022

#### *Bachelor of Science, Engineering Physics (Partially completed degree)*

GPA: 4.00/4.00

- Top GPA in cohort; top of class in multivariable/vector calculus
- Awarded research grants for combining artificial intelligence with rehabilitation exoskeletons

### New College, University of Oxford

2021

#### *Study Abroad, Magnetic Resonance Imaging Physics and Stem Cell Engineering*

First Class Honours

### University of Alberta

2018 – 2020

#### *Bachelor of Science Honours, Neuroscience (Partially completed degree)*

GPA: 4.00/4.00

- Top of class in English critical analysis and organic chemistry II
- Awarded research grants for nerve regeneration

## Clinical Electives

### Clerkship

Neurosurgery, Toronto Western Hospital, University of Toronto (2 weeks)	Sep 2024
Neurosurgery, Foothills Medical Centre, University of Calgary (2 weeks)	Sep 2024
Neurosurgery, Health Sciences Centre, University of Manitoba (2 weeks)	Aug 2024
Neurosurgery, Foothills Medical Centre, University of Calgary (1 week, selective)	Aug 2024
Critical Care Medicine (Neuro Pod), Foothills Medical Centre, University of Calgary (4 weeks)	Jul 2024
Radiology, The Ottawa Hospital, University of Ottawa (2 weeks)	May 2024
Trauma Surgery, Foothills Medical Centre, University of Calgary (2 weeks)	Apr 2024
Neurosurgery, Walter C. Mackenzie Health Sciences Centre, University of Alberta (2 weeks)	Apr 2024
Neurology, South Health Campus, University of Calgary (2 weeks)	Mar 2024
Neuropathology, Foothills Medical Centre, University of Calgary (2 weeks)	Mar 2024

### Preclerkship

Neurosurgery, Brigham and Women's Hospital, Harvard Medical School (2 weeks)	Jul 2023
General Surgery, Foothills Medical Centre, University of Calgary (1 week)	Mar 2023
Cardiology, Foothills Medical Centre, University of Calgary (1 week)	Dec 2022

## Leadership and Volunteering

### OSCEai

Feb 2023 – Present

#### *Co-Creator and Principal Software Developer*

- Created a generative AI app called **OSCEai** that offers communications and medical management practice with images, medical documentation, and feedback; 10,000+ users in 80+ countries
- Led the coding, testing, deployment, outreach, research, grant funding, and marketization phases of OSCEai
- Used in the University of Calgary preclerkship curriculum for medical students, NURS 289 for Calgary nursing students, and University of Manitoba for nursing students; collaborating with Calgary, McMaster, Ottawa, UBC medical schools to provide history taking and medical management practice with simulated patient cases
- Working with neurosurgery programs across the country, dermatology residents at Calgary and Toronto, and ophthalmology residents at Toronto and McGill for research into OSCEai's effectiveness in postgraduate medical education
- Collaborating with Alberta Association of Nurses, Calgary nursing, Manitoba nursing, SAIT respiratory therapy for medical communications practice for their students

- Media coverage: [UCalgary News](#), [The Globe and Mail](#), [Toronto Star](#), [CBC](#), [Global News](#), [CTV News](#), [AgeTech World](#)

## Medical Education Working Group

Feb 2023 – Present

*Co-Founder, Editor-In-Chief, and Principal Software Developer*

- Created [On Call Scheduler](#), an automatic call shift scheduler that optimizes time off and load balancing across team members with statistics per individual; the app allows export of the generated schedule to calendar apps and Microsoft Word
- Created a [Toronto Notes GPT](#) to provide medical knowledge using Toronto Notes and ChatGPT
- Created [PrepCaRMS](#) to provide interview practice with all CaRMS R-1 specialties with tailored feedback for each interaction
- Created the [Royal College Oral Practice App](#) to provide practice and feedback for Canadian residents oral board exams
- Created [MedNoteAI](#) app for automated generation of notes and questions from lecture videos, audio, and PDFs
- Created [SOAPNoteAI](#) an app for automated generation of SOAP notes, consult notes, differential diagnoses, and more from an audio file of a patient interaction

## Calgary Medical Students' Association (CMSA)

Sep 2022 – Present

*President (Elected)*

- Represented and advocated on behalf of 400+ MD students at the Cumming School of Medicine with faculty, administration, and corporate stakeholders; collaborated with Deans and medical student leaders at national conferences to develop and implement policies affecting all Canadian medical students (e.g., advocating to maintain Family Medicine as a 2-year residency)
- Chaired the Independent Student Analysis (ISA) Committee for [2024 accreditation cycle](#) of the Calgary MD Program by the [Committee on Accreditation of Canadian Medical Schools](#) (a 2-year process); led a team of 11 students and public health researchers to create a 59-page report on strengths, weaknesses, and recommendations for the Calgary MD program
- Advocated for and implemented “hot spot” reporting for identification of clerkship rotation sites with mistreatment issues; all clerkship rotation feedback surveys now have anonymous student reporting options
- Collaborated with faculty to create a response protocol package for students in crisis (e.g., self-harm, acute health crisis)
- Created an online platform for students to share and access study materials; created more than 1 GB of videos on course concepts, school notes, tools for career exploration, exams, shadowing, research
- Developed a financial strategy resulting in a 5% annual revenue growth for the CMSA, excluding student fees
- Organized embroidered Patagonia merchandise for all Calgary MD students; acquired a 40% discount and 14-day free trial for AMBOSS for all Calgary MD students
- Collaborated with Undergraduate Medical Education to arrange 6 small group and exam review sessions for students

## Youreka Canada

Feb 2019 – Jun 2023

*Vice President, Department of Programs*

- Collaborated on national equity, diversity, and inclusion policies affecting 200+ students across Canada
- Created [A Gentle Introduction to Data Science with R](#), an interactive e-textbook on R programming and data science used by 1,000+ students across Canada (Dec 2020 – May 2022)
- Led a team of 17 PhD, MD, and BSc students to create and deliver the Youreka national curriculum; generated 60,000+ hours of research education for 1,000+ high school and undergraduate students annually across Canada
- Spearheaded the first professional development and pedagogy training for 17 undergraduate teachers across Canada
- Taught a ten-week science program to a cohort of 30 high school and undergraduate students in Edmonton
- Spearheaded a pilot project for Youreka Edmonton that doubled student enrollment from 30 to 60 students from 2019 to 2020

## Engineering Physics Club at the University of Alberta

Sep 2021 – Jun 2022

*Vice President External & Second-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; successfully advocated to maintain the co-op program
- Founded and wrote the [Atom Magazine for Engineering Physics](#); the first issue attracted 300+ readers in 6 countries

## Research Experience

### Project neuroArm

Jul 2022 – Present

*Research Trainee (PI: Dr. Garnette Sutherland, Div. of Neurosurgery)*

- Creating large language model apps for physician consultation, automated notes, and education
- Designing machine learning-driven platforms for surgical devices and education; projects include automatic surgeon identification using their surgical tool force profile, quantification of force components which differentiate ‘expert’ vs ‘novice’ surgeons, and an end-to-end platform to track surgical trainee progress
- Created [neuroGPT-X](#), a chat-based app for physicians for vestibular schwannoma; media: [Editorial. Who, or what, to believe](#) by Mayo Clinic surgeons (Journal of Neurosurgery)

- Created [Eloquent Aid](#), an AI-powered app to assist identification of eloquent brain regions during awake craniotomies; users complete image-based tasks by speaking, and the app determines whether the answer is correct in real time; used by neurosurgeons at the University of Calgary and the College of Medicine and Philippine General Hospital

## Telerobotic and Biorobotic Systems Group

Sep 2021 – Jun 2023

Research Assistant (PI: Dr. Mahdi Tavakoli, Dept. of Electrical and Computer Engineering)

- Designed reinforcement learning algorithms for exoskeletons to personalize the patient rehabilitation process; implemented the TD3 algorithm with a lower limb exoskeleton to set a user's desired walking speed; [manuscript](#) published in [ICRA 2023](#); media: [CTV](#) and [University of Alberta](#) interviews
- Led the development of a voice-controlled exoskeleton; users complete tasks 54% faster than using a mobile app

## Publications

### Manuscripts (\*denotes corresponding author)

1. **E. Guo**, M.B. Keough, A.M. Henderson, E. Hagen, M.A. Levine, T.G. Arnason, K. Au\*, "Perioperative Management of Patients with Glioblastoma Co-Presenting with Pheochromocytoma," *Journal of Neurosurgery: Case Lessons*, Nov. 18, 2024, 8(21):CASE24374, doi: [10.3171/CASE24374](#).
2. S. Arfaie\*, M.S. Mashayekhi, M. Mofatteh, C. Ma, R. Ruan, M.A. MacLean, R. Far, J. Saini, I.E. Harmsen, T. Duda, A. Gomez, A.D. Rebchuk, A.P. Wang, N. Rasiah, **E. Guo**, A.M. Fazlollahi, E.R. Swan, P. Amin, S. Mohammed, J.D. Atkinson, R.F. Del Maestro, F. Girgis, A. Kumar, S. Das, "ChatGPT and neurosurgical education: A crossroads of innovation and opportunity," *Journal of Clinical Neuroscience*, Sep. 4, 2024, doi: [10.1016/j.jocn.2024.110815](#).
3. S. Sinha, C. Small, **E. Guo**, M. Verly, R. Arora, A. Herik, E.L. Jonsson, A.R. Harrop, J. Biernaskie, C. Temple-Oberle, V. Gabriel\*, "BURN-OP: a Screening Tool for Identifying a Symptomatically Distinct Cluster of Burn Patients with the Greatest Healthcare Needs at Discharge," *Burns*, Sep. 2, 2024, 41(1):107258, doi: [10.1016/j.burns.2024.08.024](#).
4. **E. Guo**\*, R. Ramchandani, Y. Park, M. Gupta, "OSCEai: Personalized Interactive Learning for Undergraduate Medical Education," *Canadian Medical Education Journal*, Aug 6, 2024, doi: [10.36834/cmej.79220](#).
5. **E. Guo**, C. Perlette, M. Sharifi, L. Grasse, M. Tata, V. K. Mushahwar, M. Tavakoli\*, "Speech-Based Human-Exoskeleton Interaction for Lower Limb Motion Planning," *IEEE International Conference on Human-Machine Systems*, May 2024, pp. 1-6, doi: [10.1109/ICHMS59971.2024.10555587](#).
6. **E. Guo**, M. Gupta, H. Rossong, L. Boone, B. Manoranjan, S. Ahmed, I. Stukalin, S. Lama, G. Sutherland\*, "Healthcare Spending vs Mortality in CNS Cancer: Has Anything Changed?" *Neuro-Oncology Practice*, Apr. 2024, 11(5):566-574, doi: [10.1093/nop/npae039](#).
7. J. S.G. Pascual, **E. Guo**, R. Yang, K. D. Langdon, S. Lama, G. Sutherland\*, "Ruptured pial-pial collateral aneurysm associated with left internal carotid artery occlusion: Nuances of surgical management," *Journal of Neurosurgery: Case Lessons*, Mar. 2024, 7(12):CASE2454, doi: [10.3171/CASE2454](#).
8. Y. Park\*, A. Pillai, J. Deng, **E. Guo**, M. Gupta, M. Paget, C. Naugler, "Assessing the research landscape and utility of large language models in the clinical setting: A scoping review," *BMC Medical Informatics and Decision Making*, Mar. 2024, doi: [10.1186/s12911-024-02459-6](#).
9. **E. Guo**\*, M. Gupta, J. Deng, Y. Park, M. Paget, C. Naugler, "Automated Paper Screening for Clinical Reviews Using Large Language Models: Data Analysis Study," *Journal of Medical Internet Research*, Jan. 2024, 26:e48996, doi: [10.2196/48996](#).
10. **E. Guo**, M. Gupta, S. Sinha, K. Rössler, M. Tatagiba, R. Akagami, O. Al-Mefty, T. Sugiyama, P.E. Stieg, G.E. Pickett, M. de Lotbiniere-Bassett, R. Singh, S. Lama, G. Sutherland\*, "neuroGPT-X: Towards a Clinic-Ready Large Language Model," *Journal of Neurosurgery*, Oct. 2023, 140(4):1041-1053, doi: [10.3171/2023.7.JNS23573](#).
11. A. Baghdadi, **E. Guo**, R. Singh, S. Lama, G. Sutherland\*, "Force Profile as Surgeon-Specific Signature," *Annals of Surgery Open*, Sep. 2023, doi: [10.1097/AS9.0000000000000326](#).
12. S. Samnani, F. Sachedina, M. Gupta, **E. Guo**, V. Navani\*, "Mechanisms and clinical implications in renal carcinoma resistance: narrative review of immune checkpoint inhibitors," *Cancer Drug Resistance*, Jun. 2023, doi: [10.20517/cdr.2023.02](#).
13. J. K. Mehr, **E. Guo**, M. Akbari, V. K. Mushahwar, M. Tavakoli\*, "Deep Reinforcement Learning Based Personalized Locomotion Planning for Lower-Limb Exoskeletons," *2023 IEEE International Conference on Robotics and Automation (ICRA)*, London, United Kingdom, May 2023, pp. 5127-5133, doi: [10.1109/ICRA48891.2023.10161559](#).
14. S. Becker, D. Clark\*, M. Gupta, S. Kannappan, B. Wong, E. Hernandez-Zavaleta, **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.

15. **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](https://doi.org/10.17975/sfj-2021-013).

## Invited Talks

1. **E. Guo**, "OSCEai: Generative AI for Interactive Medical Education," *Alberta Innovates Student Innovator Session*, AB, Canada, Jul. 11, 2024.
2. A. Burrell, E. Dempsey, **E. Guo**, "The Role of Artificial Intelligence in Geriatric Medicine Education," *Canadian Geriatrics Society Annual Scientific Meeting*, Calgary, AB, Canada, Apr. 26, 2024.
3. **E. Guo**, "IEEE Humengineering Series: Changing the Medical Landscape with LLMs," *IEEE Sight, Schulich School of Engineering, University of Calgary*, Calgary, AB, Canada, Jan. 11, 2024.

## Oral Presentations (\*denotes presenter)

1. R. Ramchandani\*, **E. Guo**, M.G. Mostowy, K. Ramchandani, N. Sahlollbey, M.M. Carr, L. Caulley, "Analysis of GPT-4 with Vision on the OTO Chautauqua Question Bank," *CSOHNS Annual Meeting 2024*, Montreal, QC, Canada, Jun. 1-3, 2024.
2. R. Ramchandani\*, J. Le, **E. Guo**, K. Oxford, R. Shorr, L. Caulley, "Unveiling the Mosaic: Exploring Clinically Relevant Demographic Factors in Patient Endotracheal and Laryngeal Mask Intubation," *CSOHNS Annual Meeting 2024*, Montreal, QC, Canada, Jun. 1-3, 2024.
3. A. Pillai\*, **E. Guo**, M. Gupta, "Assessing GPT-4 with vision for automated question explanations in undergraduate medical education," *OHMES Health & Medical Education Scholarship Symposium*, Calgary, AB, Canada, Feb. 21, 2024.

## Poster Presentations (\*denotes presenter)

1. J. S.G. Pascual, **E. Guo**, K. J.O. Khu, S. Lama, G. Sutherland, "AI-Assisted Awake Craniotomy: First Intraoperative Use OF EloquentAid," *AACNS 2024*, Kaohsiung, Taiwan, Nov. 7-10, 2024.
2. M. Černý\*, M. Májovská, H. Hallak, S. Lama, R. Singh, **E. Guo**, K. Horčíčáková, S. Hužava, K. Sajfrídová, K. E.H. Ahmadová, G. Sutherland, D. Netuka, "Large Language Models Can Extract Tabular Data from Unstructured Patient Records To Be Used in Large-Scale Retrospective Studies," *Brain and Spine*, Oct. 14, 2024, 4:103579, doi: [10.1016/j.bas.2024.103579](https://doi.org/10.1016/j.bas.2024.103579)
3. Y. Park\*, **E. Guo**, M. Sachdeva, B. Ma, S. Mirali, B. Rankin, N. Nathaniels, A. Abdulmulla, T. Lapa, T. Champagne, "OSCE-GPT Dermatology: Augmenting Medical Education With Artificial Intelligence," *Dermatology Medical Student Virtual Symposium 2024*, Brigham and Women's Hospital, Boston, MA, May 29, 2024.
4. **E. Guo**, L. Boone, H. Shakil, R. Sanguinetti\*, M. Gupta, S. Lama, G. Sutherland, "Chordoma management with artificial intelligence: a scoping review of current applications and future prospects," *CNSF 2024*, Toronto, ON, Canada, May 20-25, 2024, doi: [10.1017/cjn.2024.186](https://doi.org/10.1017/cjn.2024.186).
5. **E. Guo**, R. Sanguinetti\*, R. Ramchandani, S. Lama, G. Sutherland, "Evaluating AI performance in written neurosurgery exams: a comparative analysis of large language models," *CNSF 2024*, Toronto, ON, Canada, May 20-25, 2024, doi: [10.1017/cjn.2024.213](https://doi.org/10.1017/cjn.2024.213).
6. J. S.G. Pascual\*, **E. Guo**, R. Yang, K. D. Langdon, S. Lama, G. Sutherland, "Left temporal aneurysm resection: surgical approach in Pial-Pial collateral formation from the posterior temporal artery secondary to left internal artery occlusion," *CNSF 2024*, Toronto, ON, Canada, May 20-25, 2024, doi: [10.1017/cjn.2024.223](https://doi.org/10.1017/cjn.2024.223).
7. **E. Guo**, R. Sanguinetti\*, L. Boone, B. Karmur, S. Lama, G. Sutherland, "Canadian neurosurgical healthcare spending trends," *CNSF 2024*, Toronto, ON, Canada, May 20-25, 2024, doi: [10.1017/cjn.2024.230](https://doi.org/10.1017/cjn.2024.230).
8. R. Ramchandani\*, S.G. Biglou, M. Gupta, **E. Guo**, "Using AI to revolutionize clinical training through OSCE-GPT: a focused exploration of user feedback on otolaryngology and neurology cases," *CNSF 2024*, Toronto, ON, Canada, May 20-25, 2024, doi: [10.1017/cjn.2024.176](https://doi.org/10.1017/cjn.2024.176).
9. **E. Guo**, J. S.G. Pascual\*, S. K.N. Cua, K. J.O. Khu, S. Lama, G. Sutherland, "Automated awake brain mapping with eloquentaid: a novel tool for low-resource settings," *CNSF 2024*, Toronto, ON, Canada, May 20-25, 2024, doi: [10.1017/cjn.2024.236](https://doi.org/10.1017/cjn.2024.236).
10. Y. Park\*, A. Pillai, J. Deng, M. Gupta, **E. Guo**, M. Paget, C. Naugler, "Assessing the research landscape and clinical utility of large language models: a scoping review," *The International Congress on Academic Medicine 2024 Conference*, Vancouver, BC, Canada, Apr. 12-15, 2024.
11. Y. Park\*, B. Ma, M. Gupta, **E. Guo**, "Temporal and Regional Trends in Canada for the Epidemiology and Management of Infective Endocarditis," *The International Congress on Academic Medicine 2024 Conference*, Vancouver, BC, Canada, Apr. 12-15, 2024.
12. I. Ma\*, **E. Guo**, M. Gupta, O. Chen, M. Vergouwen, B. Chiang, M. Paget, C. Naugler, A. Harvey, "Using large language



models to automate literature screening in undergraduate medical program evaluation,” *International Congress on Academic Medicine 2024*, Vancouver, BC, Canada, Apr. 12-15, 2024.

13. Y. Park\*, B. Ma, **E. Guo**, M. Gupta, M. Ramien, “RIME-GPT: Leveraging AI to provide real-time, personalized clinical support for pediatric reactive infectious mucocutaneous eruptions (RIME),” *Pediatric Dermatology Research Alliance*, Nov. 9-11, 2023.
14. **E. Guo**\*, M. Gupta, H. Rossong, S. Lama, G. Sutherland, “A cost analysis of brain and nervous system cancer care: an examination of healthcare expenditure trends in the United States from 1996 to 2016,” *Neuro-Oncology*, Vancouver, BC, Canada, Nov. 15-19, 2023, vol. 25, pp. v122-v123, doi: [10.1093/neuonc/noad179.0464](https://doi.org/10.1093/neuonc/noad179.0464).
15. **E. Guo**\*, M. Gupta, S. Sinha, K. Rössler, M. Tatagiba, R. Akagami, O. Al-Mefty, T. Sugiyama, P.E. Stieg, G.E. Pickett, M. de Lotbiniere-Bassett, R. Singh, S. Lama, G. Sutherland, “neuroGPT-X: Advancing Responsible Large Language Models for Clinical Use,” *CNS 2023*, Washington, DC, USA, Sep. 9-13, 2023.
16. **E. Guo**\*, M. Gupta, B. Wong, J. Ali, A. Pillai, P. Torabi, M. Paget, C. Naugler, “Performance of ChatGPT on Case-Based Clinical Scenarios: Potential for Incremental Utility of Large Language Models in Medical Education,” *Association for Medical Education in Europe Glasgow 2023*, Glasgow, Scotland, Aug. 26-30, 2023, doi: [10.21955/mep.1115122.1](https://doi.org/10.21955/mep.1115122.1).
17. **E. Guo**\*, M. Gupta, J. Ali, A. Pillai, P. Torabi, “Large Language Models: Practicing Clinical Decision Making,” *Health and Medical Education Scholarship Symposium*, Calgary, AB, Canada, May 11, 2023.
18. **E. Guo**\*, A. Baghdadi, R. Singh, S. Lama, G. Sutherland, “What Makes a Surgeon Unique? Machine Learning for Surgeon Identification Using Their Force Profile,” *2023 AANS Annual Scientific Meeting*, Los Angeles, CA, USA, Apr. 21-24, 2023.
19. **E. Guo**\*, A. Baghdadi, R. Singh, S. Lama, G. Sutherland, “Machine Learning Characterization of Important Tool-Tissue Interaction Forces Using Bipolar Forceps,” *2023 AANS Annual Scientific Meeting*, Los Angeles, CA, USA, Apr. 21-24, 2023.
20. 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,” *Canadian Society for the Study of Education XLIX Annual Conference*, Canada, May 30-June 3, 2021.

## Preprints

1. Y. Park, A. Pillai, J. Deng, **E. Guo**, M. Gupta, M. Paget, C. Naugler, “Assessing the research landscape and utility of large language models in the clinical setting: A scoping review,” *Research Square*, Oct. 30, 2023, doi: [10.21203/rs.3.rs-3472000/v1](https://doi.org/10.21203/rs.3.rs-3472000/v1).
2. **E. Guo**, C. Perlette, M. Sharifi, L. Grasse, M. Tata, V. K. Mushahwar, M. Tavakoli, “Speech-Based Human-Exoskeleton Interaction for Lower Limb Motion Planning,” *arXiv*, Oct. 4, 2023, doi: [10.48550/arXiv.2310.03137](https://doi.org/10.48550/arXiv.2310.03137).
3. **E. Guo**, M. Gupta, J. Deng, Y. Park, M. Paget, C. Naugler, “Automated Paper Screening for Clinical Reviews Using Large Language Models,” *arXiv*, May 2, 2023, doi: [10.48550/arXiv.2305.00844](https://doi.org/10.48550/arXiv.2305.00844).
4. **E. Guo**, M. Gupta, S. Sinha, K. Rössler, M. Tatagiba, R. Akagami, O. Al-Mefty, T. Sugiyama, P.E. Stieg, G.E. Pickett, M. de Lotbiniere-Bassett, R. Singh, S. Lama, G. Sutherland, “neuroGPT-X: Towards an Accountable Expert Opinion Tool for Vestibular Schwannoma,” *medRxiv*, Feb. 26, 2023, doi: [10.1101/2023.02.25.23286117](https://doi.org/10.1101/2023.02.25.23286117).

## Datasets

1. J. Deng, **E. Guo**, H. Zhao, K. Venugopal, M. Moskalyk, “Development of a transfer learning-based, multimodal neural network for identifying malignant dermatological lesions from smartphone images”, *Mendeley Data*, V1, Oct. 2, 2024, doi: [10.17632/2yv6rv3pzs.1](https://doi.org/10.17632/2yv6rv3pzs.1).
2. **E. Guo**, M. Gupta, J. Deng, Y. Park, M. Paget, C. Naugler, “Automated Paper Screening for Clinical Reviews Using Large Language Models,” *Mendeley Data*, V1, May 1, 2023, doi: [10.17632/np79tmhkh5.1](https://doi.org/10.17632/np79tmhkh5.1).
3. **E. Guo**, M. Gupta, S. Sinha, K. Rössler, M. Tatagiba, R. Akagami, O. Al-Mefty, T. Sugiyama, P.E. Stieg, G.E. Pickett, M. de Lotbiniere-Bassett, R. Singh, S. Lama, G. Sutherland, “neuroGPT-X: Towards an Accountable Expert Opinion Tool for Vestibular Schwannoma,” *Mendeley Data*, V1, Feb. 27, 2023, doi: [10.17632/b9mck42r35.1](https://doi.org/10.17632/b9mck42r35.1).

## Registrations

1. R. Ramchandani, S. Biglou, M. Mostowy, D. Mahiny, **E. Guo**, L. Caulley, E. J. Propst, N. E. Wolter, J. D. Wasserman, J. M. Siu, “Beyond the code: Analyzing Bias in Thyroid Cancer Artificial Intelligence Models,” *PROSPERO 2024*, available: [CRD42024519238](https://www.crd42024519238).
2. R. Ramchandani, J. Le, **E. Guo**, K. Oxford, G. Anicho-Okereke, R. Shorr, T. Eskander, L. Caulley, “Exploring the Influence of Demographic Factors on Endotracheal Tube and Laryngeal Mask Airway Insertion,” *PROSPERO 2024*, available: [CRD42024495263](https://www.crd42024495263).

3. Y-J. Park, J. Deng, A. Pillai, M. Gupta, **E. Guo**, Mike Paget, and Christopher Naugler, “Assessing the research landscape and utility of LLMs in the clinical setting: protocol for a scoping review,” Mar. 28, 2023, doi: [10.17605/OSF.IO/498K6](https://doi.org/10.17605/OSF.IO/498K6).

## Selected Grants (of 19)

<b>Innovation in Surgical Education Grant</b>	Mar 2024
• Awarded by the Department of Surgery and Office of Surgical Education in Calgary for the development of OSCE-GPT	
<b>Students Union Quality Money Grant</b>	Mar 2024
• Awarded \$35,797 for the development of OSCE-GPT	
<b>Microsoft for Startups Founders Hub</b>	Mar 2024
• Awarded Microsoft Azure and OpenAI credits for the development of OSCE-GPT	
<b>Mach-Gaensslen Foundation: Summer Medical Student Research Award</b>	Feb 2024
• Awarded for project titled “Development and Use of a Novel Large Language Model (LLM) for the Management of Terminal Brain Cancers”	
<b>OpenAI Researcher Access Program Grant</b>	Jul 2023
• Awarded for research to develop responsible large language models in medicine	
<b>Ontario Medical Student Education Research Grant</b>	May 2023
• Awarded to create an interactive app for dermatology trainees to practice oral examinations (co-awarded with Ye-Jean Park and Dr. Mehul Gupta; PI: Dr. Trevor Champagne)	
<b>NSERC Undergraduate Student Researcher Award</b>	Mar 2022
• Awarded for project titled “Intelligent control of a lower-limb exoskeleton”	
<b>Dean’s Research Award</b>	Sep 2021
• Awarded for project titled “Speech-based locomotion planning for lower-limb exoskeletons”	
<b>Alberta Innovates Summer Research Studentship</b>	Apr 2020
• Awarded for project titled “Skin and Nerves: Understanding the dialogue between axons and skin cells to restore sensation”	
<b>Office of the Provost and VP (Academic) Summer Studentship Award</b>	May 2019
• Awarded for project titled “Axon regrowth and plasticity in diabetic neuropathy: the role of growth cone molecules”	

## Selected Scholarships and Awards (of 22)

<b>Dutkevich Memorial Trust Award for Medical Students</b>	Jun 2024
• Offered to Calgary MD students who have taken an approved clerkship elective in Pathology, Medical Microbiology, or Neuropathology	
<b>Cumming School of Medicine Tuition Reinvestment Bursary</b>	Dec 2023
• Offered annually to undergraduate students enrolled in the Cumming School of Medicine, MD Program	
<b>Louise McKinney Post-Secondary Scholarship</b>	Dec 2019, Sep 2020, Nov 2022
• Awarded on the basis of superior academic achievement (top 1.5-2% of faculty) to students at the University of Alberta and Calgary who are also Alberta residents; awarded for the 2018/19, 2019/20, and 2021/22 academic terms	
<b>Peter Lougheed Scholarship</b>	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	
<b>Undergraduate Big Data Challenge Research Excellence Award</b>	Jul 2020
• Used unsupervised learning, feature selection algorithms, and neural networks to predict cancer response to chemotherapeutics	
<b>Alberta Innovates COVID-19 Hackathon Post-Secondary Student Award</b>	May 2020
• Created an interactive app to model how COVID-19 spreads given age, poverty, income, and population density	
• Media coverage: <a href="#">University of Alberta Folio article</a> and the <a href="#">Genome Alberta podcast</a>	

## Sci5 Outstanding Achievement in Science Scholarship

Apr 2019, Mar 2020

- 2020 criteria: 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
- 2019 criteria: awarded to the top 5 students based on GPA in the Faculty of Science at the University of Alberta who also demonstrate exceptional extracurricular activities

## 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

## Employment

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### Kaleidoscope XR

Oct 2024 – Present

#### Strategic Advisor

- Created OSCEai, a generative AI application for healthcare training used in 80+ countries; intellectual property developed by me and subsequently acquired by Kaleidoscope XR under a royalty agreement with ongoing advisory involvement
- Providing strategic direction for commercialization, managing client partnerships, and overseeing knowledge transfer
- Leading research initiatives to evaluate the effectiveness of OSCEai in medical education and clinical practice

### University of Alberta

Sep 2020 – Apr 2022

#### Teaching Assistant, Introduction to Tangible Computing I & II (CMPUT 274 & 275)

- 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
- Collaborated with a team of 16 teaching assistants to facilitate course delivery

### Edmonton Fencing Club

Nov 2016 – Oct 2020

#### Fencing Coach

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

## Media Coverage

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### Editorials

1. Journal of Neurosurgery, Michael J. Link, MD and Matthew L. Carlson, MD: [Editorial. Who, or what, to believe](#) Oct 2023

### Podcasts

1. Journey to Medicine, Spotify, Nathan Barreth: [E5 - Eddie Guo: Find Your Reason](#) Dec 2023

### News

1. UCalgary News, Lorelei Anselmo: [Empowering teaching and learning experiences through GenAI](#) May 2024
2. Calgary Department of Clinical Neurosciences 2022-2023 Annual Report: [The AI will see you shortly](#) Mar 2024
3. AgeTech World, Jane Hall: [New AI app could hold key to better older patient-doctor communication](#) Oct 2023
4. The Canadian Press: [Calgary med student develops AI patient program](#) Sep 2023
5. CBC, Bill Graveland: [New app uses AI to help Calgary medical students practise interacting with patients](#) Sep 2023
6. L'actualité: Bill Graveland: [Un étudiant de Calgary crée une application pour former les futurs médecins](#) Sep 2023
7. Noovo Info, Bill Graveland: [De futurs médecins formés avec une application?](#) Sep 2023
8. UToday, Kelly Johnston: [UCalgary students create app to help medical students learn how to talk to patients](#) Sep 2023
9. CTV News Edmonton, Adam Lachacz: [U of A integrating artificial intelligence into exoskeleton technology](#) Aug 2022
10. U of A Folio, Michael Brown: [Students develop online tool to predict COVID-19 spread based on demographics](#) Jul 2020
11. Cybera: [Alberta Innovates Announces Results from COVID-19 Data Science Hackathon](#) May 2020
12. Alberta Innovates: [Flattening the Curve and Promoting Economic Recovery through Innovation](#) May 2020
13. CBC, The Canadian Press: [Table tennis player, 10, turning heads in Halifax](#) Feb 2011

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|---|----------|
| 14. The Globe and Mail, Oliver Moore: <a href="#">Just 10, Eddie has small size, huge potential</a> | Feb 2011 |
| 15. Toronto Star: <a href="#">10-year-old table tennis star competes against pros</a>               | Feb 2011 |
| 16. Government of Alberta: <a href="#">Team Alberta named for Canada Winter Games</a>               | Jan 2011 |

## Selected Sports Awards

<b>Fencing (Foil)</b>	2011 – 2020
• Accepted annually as a High Performance Program Athlete with the Canadian Fencing Federation	2013 – 2018
• Medalled in 5 Canadian national competitions in the open, U20, U17, and U13 categories	2013 – 2018
• Achieved USA Fencing A16 ranking (highest ranking in USA Fencing)	2016
• 23rd Place Guatemala Junior (U20) World Cup; represented Team Canada	2016
<b>Table Tennis</b>	2007 – 2012
• Medalled in every competition (50+ national and local events) in U13 and U11 singles, doubles, and team events	2008 – 2012
• Youngest athlete at the Halifax Canada Winter Games; media coverage: <a href="#">CBC Sports</a> and <a href="#">Toronto Star</a>	2011

## Skills and Hobbies

<b>Certifications</b>	USMLE Step 1, ACLS, BLS, Standard First Aid CPR and AED Level C, DELF B1
<b>Skills</b>	Machine learning, reinforcement learning, medical education, curriculum development
<b>Software</b>	Python, R, C++, MATLAB, L <sup>A</sup> T <sub>E</sub> X, HTML, CSS, JavaScript, Node.JS, Simulink, Git
<b>Professional Societies</b>	Congress of Neurological Surgeons, Institute of Electrical and Electronics Engineers (IEEE)
<b>Hobbies &amp; Interests</b>	Billiards, programming, generative AI, running, fencing, soccer, reading