

# Edward (Eddie) Guo

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## Education

<b>University of Calgary</b>	2022 – 2025
<i>Doctor of Medicine (MD)</i>	
<ul style="list-style-type: none"><li>Published 15 peer-reviewed manuscripts, 24 abstracts, 3 invited talks; USMLE Step 1 (passed); USMLE Step 2 CK (scheduled)</li><li>Awarded UpSurge Excellence in Surgery Scholarship for contributions to diversity, equity, and inclusion in surgery; awarded Canadian Association for Medical Education Rising Star – Certificate of Excellence for contributions to medical education; awarded Dutkevich Memorial Trust Award for Neuropathology elective rotation performance</li><li>Awarded grants from OpenAI, Microsoft, and University of Calgary to develop large language model platforms for medical education and clinical practice</li></ul>	
<b>University of Alberta</b>	2020 – 2022
<i>Bachelor of Science, Engineering Physics (Partially completed degree)</i>	GPA: 4.00/4.00
<ul style="list-style-type: none"><li>Top GPA in cohort; top of class in multivariable/vector calculus</li><li>Awarded research grants for combining artificial intelligence with rehabilitation exoskeletons</li></ul>	
<b>New College, University of Oxford</b>	2021
<i>Study Abroad, Magnetic Resonance Imaging Physics and Stem Cell Engineering</i>	First Class Honours
<b>University of Alberta</b>	2018 – 2020
<i>Bachelor of Science Honours, Neuroscience (Partially completed degree)</i>	GPA: 4.00/4.00
<ul style="list-style-type: none"><li>Top of class in English critical analysis and organic chemistry II</li><li>Awarded research grants for nerve regeneration</li></ul>	

## Clinical Electives

### Clerkship

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

### Preclerkship

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

## Leadership and Volunteering

<b>OSCEai</b>	Feb 2023 – Present
<i>Co-Creator and Principal Software Developer</i>	
<ul style="list-style-type: none"><li>Created a generative AI app called <b>OSCEai</b> that offers communications and medical management practice with images, medical documentation, and feedback; 10,000+ users in 80+ countries</li><li>Led the coding, testing, deployment, outreach, research, grant funding, and marketization phases of OSCEai</li><li>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</li><li>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</li></ul>	

- 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. **E. Guo\***, R. Ramchandani, Y. Park, M. Gupta, "Ai in Medical Education: Interactive and Personalized Learning with Osceai," *ICAM 2025*, Halifax, NS, Canada, Apr. 3-6, 2025.
2. 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.
3. 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.
4. 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. Abduelmula, 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](#).

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](#).
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](#).

## Selected Grants (of 19)

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<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>CFMS Student Initiative Grant</b>	Mar 2023
• Awarded to incorporate artificial intelligence into undergraduate medical education	
<b>Social Innovation Micro Grant</b>	Mar 2023
• Awarded to incorporate large language models into the University of Calgary Cumming School of Medicine accreditation process	
<b>Undergraduate Medical Education Travel Grant</b>	Jan 2023
• Awarded to present machine learning in surgery research at the 2023 AANS Annual Scientific Meeting	
<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 24)

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<b>Canadian Association for Medical Education Rising Star – Certificate of Excellence</b>	Dec 2024
• Awarded to recognize learners who have demonstrated a commitment and passion for health professions education	
<b>UpSurge Excellence in Surgery Scholarship</b>	Nov 2024

- Awarded for my contributions to diversity, equity, and inclusion through an app I created called Eloquent Aid used in the Philippines to assist in identifying eloquent brain regions during awake craniotomies via image-based tasks with artificial intelligence

#### **Dutkevich Memorial Trust Award for Medical Students**

Jun 2024

- Offered to Calgary MD students who have taken an approved clerkship elective in Pathology, Medical Microbiology, or Neuropathology

#### **Cumming School of Medicine Tuition Reinvestment Bursary**

Dec 2023

- Offered annually to undergraduate students enrolled in the Cumming School of Medicine, MD Program

#### **Alberta Bench to Bedside Young Innovator Runner-Up Prize**

May 2023

- Awarded for pitching natural language processing software that creates clinical notes and suggests relevant billing codes from audio recordings of patient encounters

#### **Louise McKinney Post-Secondary Scholarship**

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

#### **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

#### **Undergraduate Big Data Challenge Research Excellence Award**

Jul 2020

- Used unsupervised learning, feature selection algorithms, and neural networks to predict cancer response to chemotherapeutics

#### **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](#)

#### **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**

#### **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
14. The Globe and Mail, Oliver Moore: [Just 10, Eddie has small size, huge potential](#) Feb 2011
15. Toronto Star: [10-year-old table tennis star competes against pros](#) Feb 2011
16. Government of Alberta: [Team Alberta named for Canada Winter Games](#) Jan 2011

## Selected Sports Awards

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<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

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<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, $\LaTeX$ , 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