ERIC XIE

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EDUCATION

University of Toronto (UofT)   **Toronto, ON**
BASc. Engineering Science   *Sep 2024 – Apr 2028*
- **GPA:** 3.8/4.0
- **Extracurriculars:** UofT Aerospace SAE software team - camera simulation & localization in Gazebo; UofT Formula Racing braking team - designing brake piston in Solidworks
- **Roles:** EngSci 1st & 2nd year Class Representative (2/278) - resolve academic challenges, improve student well-being

PROFESSIONAL EXPERIENCE

Research Intern   **Toronto, ON**
Syncere AI   *May 2025 - Sep 2025*
- Used CAD to develop custom camera mount and wrote custom software to Koch, an open source robotic arm.
- Trained an end-to-end **impedance controller** with **RL** in Isaac Lab; overcame sim-to-real gap and deployed on robot
- Developed a novel **bilateral teleoperation** system using servo current readings, boosting data collection by 17%
- Collected teleoperation data and trained with **diffusion policy** to allow for compliant movements during inference

MLH Software Engineering Fellow   **Remote**
Facebook AI Research   *Jun 2024 - Sep 2024*
- Contributed to SimulEval, an evaluation toolkit for **simultaneous translation**; 5 Python pull requests merged
- Created a visualization feature for raw speech to text data, aiding researchers in interpreting and understanding output
- Implemented a Docker feature for remote speech to text inference, ensuring uniform environment OS and dependencies
- Developed a streaming demo feature that transcribes user's speech in real-time through OpenAI's Whisper and Pyaudio
- Proactively troubleshot logic and dependency errors, improving GitHub workflow efficiency by 50%

PROJECTS

DUM-E   **Waterloo, ON**
Hackathon Team Member - Robotics   *Sep 2025*
- Invented DUM-E from the Iron Man movie - an **NLP** powered robotic arm that can reason, generalize, and execute tasks such as grasping, waving, and doing pick & place - with just voice, winning the **Hack the North** Finalist award
- Analytically solved 5 DOF **inverse kinematics**; successfully deployed on Raspberry Pi with inference time of <1 ms
- Leveraged OpenCV and homography to locate objects; created multimodal **VLA** with Groq & Llama 3.3

Autotune   **Toronto, ON**
Hackathon Team Member - Frontend   *March 2025*
- Built a marketplace for anyone to outsource ML model fine-tuning, democratizing access to GPU computing resources
- Created frontend with TypeScript; SSR with Next.js to optimize performance; integrated with Python backend to submit training requests in Firebase and finetune with HuggingFace API, winning **Best ML Hack** at GenAI Genesis

Viral Insight   **Remote**
Frontend Developer   *Jun 2024 - Jul 2024*
- Developed an AI-powered regression-based YouTube statistic prediction tool as part of Buildspace 2024, empowering content creators with brainstorming catchy titles
- Designed the frontend UI using NextJS with backend integration; hosted on Vercel
- Successful product demo and launch with 600+ page views and 100+ upvotes on **Product Hunt**

Nail Braille   **London, ON**
Chief Engineering Officer   *July 2022 - Nov 2022*
- Led development of a **speech-to-braille** learning device for visually impaired individuals to help navigating and interacting with the surrounding environment
- Utilized Arduino & CAD; interfaced Mozilla DeepSpeech; developed 3 iterative prototypes
- Shad 2022 Best Prototype Award & 2022 Youth Innovation Showcase Finalist + Public's Choice Award

VEX Robotics   **West Vancouver, BC**
Programmer & Designer   *Sep 2021 - Jun 2024*
- Developed motion control algorithms: **PID**, odometry, pure pursuit to execute precise autonomous robotic movements
- Designed with CAD; constructed hardware prototypes and mechanisms: power-take-off (PTO), chassis, ratchet, gears
- 8 tournament awards, including 2022 BC Provincial Finalist and scoring top 30% in the World Championship

TEDxYouth@SunsetBeach **Vancouver, BC**

TEDx Speaker *Oct 2023 - Dec 2023*
- Delivered a 10-minute TED Talk titled "Take the First Step - What I Learned from Talking to 100 Strangers"
- Detailed overcoming social anxiety and communication barriers as an international student; inspired others to continuously step outside of their comfort zones

LEADERSHIP

Ten Ton Robotics **West Vancouver, BC**

Tournament Manager *Oct 2021 – Jun 2024 (78 hours)*
- Reserved VEX IQ elementary & middle school tournament venue; set up hardware & software; coordinated volunteers; resolved logistic & technical challenges
- Ten Ton Robotics Most Valuable Volunteer 2022 & 2023
- International Robotics Honour Society 2024 for exceptional contribution in robotics education

Ambleside Parkrun **West Vancouver, BC**

Parkrun Director *Aug 2022 - Jun 2024 (44 hours)*
- Setup & oversaw event-day 5km course checks to ensure safety
- Gave 5-minute speeches to welcome weekly 100+ participants; promoted fitness in the community
- District of West Vancouver Youth Recognition Award in 2023 for exceptional community involvement and service

UTG Academy **Vancouver, BC**

VEX IQ Robotics Instructor *Jul 2023 – Aug 2023 (47 hours)*
- Taught hardware mechanisms: bar lifts, gear ratios to educate young students about mechanical design
- Introduced software tools: Scratch, **VR** to help students build fundamental programming skills
- Fostered an interactive and fun play-and-learn environment for 20+ middle school VEX IQ students

AWARDS & CERTIFICATIONS

Hack the North Finalist *Software, Sep 2025*

GenAI Genesis Hackathon Best ML Hack *Software, Mar 2025*

AWS AI & ML Scholarship - developed end-to-end ML workflows in AWS *Software, Nov 2024*

AWS Hack The Student Life Hackathon Winner *Software, Nov 2024*

American Computer Science League (ACSL) Senior Division 1st Place, Finalist *Software, May 2023*

USA Computing Olympiad (USACO) Gold Division *Software, Mar 2023*

ICRA Undergrad Outreach Workshop Award - attended conference fully funded *Robotics, May 2025*

International Robotics Honour Society *Robotics, Jan 2024*

UofT Engineering Kompetition (UTEK) Junior Division Finalist, 4/50 teams *Hardware & design, Jan 2025*

High School Mathematical Contest in Modelling (HiMCM) Meritorious *Mathematics, Jan 2024*

Waterloo Math Competition (CIMC, Cayley, Galois, Hypatia, Euclid, Fermat) Student Honour Roll *Mathematics, Nov 2021 - Feb 2023*

Standard First Aid with CPR C/AED - Lifesaving Society *Safety, May 2025*

WHMIS Safety Certification *Safety, Sep 2024*

Bronze Cross - Lifesaving Society *Safety, June 2021*

SKILLS & INTERESTS

Software skills: C++, Java, Python, PyTorch, HTML, CSS, JavaScript, ROS, Docker, GitHub, ReactJS, NextJS, Vercel, Isaac Gym, Gazebo, OpenCV, AWS Sagemaker, S3, Lambda & Step functions

Hardware skills: Solidworks, Arduino, Onshape, 3D Printing, Soldering, Machining, Welding, Robotics design

Professional skills: Leadership & Management, Teamwork & Collaboration, Active learning & Curiosity, Communication & Public speaking

Languages: English (native), Mandarin (native), French (intermediate)

Hobbies:
- Sports: Track and field, ultimate frisbee, swimming
- Music: Piano, finger style guitar
- Chess**:** BC Chess Champion and chess school coach; Founder & President of high school chess club