

Eric Xie

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EDUCATION

University of Toronto (UofT)

BASc. Engineering Science

- 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 - resolve academic challenges, improve student well-being

Toronto, ON

Sep. 2024 – Apr. 2028

EXPERIENCE

Robotics Research Intern

May 2025 – Sep. 2025

Syncere AI

Toronto, ON

- Allowed robot arms to be implicitly compliant and reactive to external forces, improving safety in human-robot interactions while removing need for a 6-axis torque sensor which reduces cost by at least \$2,000
- Designed an end-to-end impedance controller with reinforcement learning in Isaac Lab; overcame sim-to-real gap and deployed on Koch arm robot
- Developed a bilateral teleoperation system using servo current readings, boosting data collection speed by 17%
- Collected teleoperation data and trained with diffusion to allow for compliant movements during inference

MLH Software Engineering Fellow

June 2024 – Sep. 2024

Facebook AI Research

Remote

- Contributed to SimulEval, an evaluation toolkit for simultaneous translation; 5 Python pull requests merged
- Created visualization features for raw speech to text data, aiding researchers in understanding output
- Implemented a Docker feature for remote speech to text inference, ensuring uniform environment dependencies
- Developed a streaming demo feature that transcribes speech in real-time through OpenAI's Whisper and Pyaudio
- Proactively troubleshoot logic and dependency errors, improving GitHub workflow efficiency by 50%

PROJECTS

DUM-E | Robotics, NLP, OpenCV, Raspberry Pi, Groq, Llama 3.3

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 Hack the North
- 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 | TypeScript, Next.js, Python, Firebase, HuggingFace API

Mar. 2025

- Built a marketplace for anyone to outsource ML model fine-tuning, democratizing access to GPU computing resources, winning Best ML Hack at GenAI Genesis
- 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

Viral Insight | Frontend, NextJS, AI Regression

June 2024 – July 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 | Arduino, CAD, Mozilla DeepSpeech

July 2022 – Nov. 2022

- Chief Engineering Officer: 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 | C++, PID, Odometry, CAD

Sep. 2021 – June 2024

- Programmer & Designer: 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

LEADERSHIP

TEDx Speaker <i>TEDxYouth@SunsetBeach</i>	Oct. 2023 – Dec. 2023 Vancouver, BC
<ul style="list-style-type: none">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	
Tournament Manager <i>Ten Ton Robotics</i>	Oct. 2021 – June 2024 West Vancouver, BC
<ul style="list-style-type: none">Reserved VEX IQ elementary & middle school tournament venue; set up hardware & software; coordinated volunteers; resolved logistic & technical challengesTen Ton Robotics Most Valuable Volunteer 2022 & 2023International Robotics Honour Society 2024 for exceptional contribution in robotics education	
Parkrun Director <i>Ambleside Parkrun</i>	Aug. 2022 – June 2024 West Vancouver, BC
<ul style="list-style-type: none">Setup & oversaw event-day 5km course checks to ensure safetyGave 5-minute speeches to welcome weekly 100+ participants; promoted fitness in the communityDistrict of West Vancouver Youth Recognition Award in 2023 for exceptional community involvement and service	
VEX IQ Robotics Instructor <i>UTG Academy</i>	July 2023 – Aug. 2023 Vancouver, BC
<ul style="list-style-type: none">Taught hardware mechanisms: bar lifts, gear ratios to educate young students about mechanical designIntroduced software tools: Scratch, VR to help students build fundamental programming skillsFostered an interactive and fun play-and-learn environment for 20+ middle school VEX IQ students	

AWARDS & CERTIFICATIONS

Hack the North Winner <i>NLP powered robotic arm</i>	Sep. 2025
GenAI Genesis Hackathon Best ML Hack <i>LLM finetuning marketplace</i>	Mar. 2025
AWS AI & ML Scholarship <i>End-to-end ML workflows in AWS</i>	Nov. 2024
AWS Hack The Student Life Hackathon Winner <i>Roommate matching using semantic search</i>	Nov. 2024
ACSL Senior Division 1st Place, Finalist <i>Competitive programming</i>	May 2023
USA Computing Olympiad (USACO) Gold Division <i>Competitive programming</i>	Mar. 2023
ICRA Undergrad Outreach Workshop Award <i>Attending world's largest robotics conference</i>	May 2025
International Robotics Honour Society	Jan. 2024
UofT Engineering Kompetition (UTEK) Junior Division Finalist	Jan. 2025
Standard First Aid with CPR C/AED	May 2025
Bronze Cross - Lifesaving Society	June 2021

TECHNICAL 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, CUDA, Verilog, RISC V Assmebly
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: Track and field, ultimate frisbee, swimming; Piano, finger style guitar; Chess (BC Chess Champion)