

Daniel Lu

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Education

Carleton University, B.Sc. in Computer Science, Honours Program (Co-op) Ottawa, Canada
AI & Machine Learning Stream - Dean's Honours List - Major CGPA: 3.9/4.0 Sep 2023 – Present

Experience

Blackberry QNX Jan 2025 – Apr 2025
Software Developer Intern Ottawa, Ontario

- Developed tools and automated tests in **Bash, C, and Python** to support QNX systems and address client patch requests, enhancing **operational efficiency**, and improving **testing accuracy**.
- Designed and deployed a **scalable, permanent network testing environment**, enabling seamless remote access for development teams across **APAC and EU**, enhancing **global collaboration** and **testing efficiency**.
- Expanded test coverage for **QNX's RTOS** by designing and implementing **automated Pytest-based tests** for network manager components (**io-pkt and io-sock**), ensuring safety certification standards for product release are met.

Software Subteam Lead, Bot Developer, and Mentor Jun 2021 – April 2024, Part-time
FIRST Robotics Team 8729: Spark Youth Robotics Club Kanata, Ontario

- **Organized online workshops** tailored toward children to spark interest in **robotics, software development, and engineering**
- Managed the **autonomous and lighting software subteams** during the FRC build season.
- Introduced team members to **WPILib, PID systems**, and the **GitHub workflow**; responsible for preparing weekly lesson plans.
- Became the **first team from Ottawa** to qualify for the FIRST Championships in **4 years, as rookies**.
- Noticed inefficiencies in managing club tasks across multiple platforms; used **Node.js** paired with **PostgreSQL** to craft a **general-purpose Discord bot** tailored towards streamlining various club tasks.

Projects

Walk in the Park | [Devpost](#) | [GitHub](#) April 2024, University of Toronto

- Achieved **Best AI in Education Hack** in **GenAI Genesis 2024** (out of **250+ participants**).
- Used **React Native, Gemeni, and Flask** to build a **gamified mobile application** that aims to foster empathy, understanding, and cultural awareness towards local communities.

TRACY: Tennis Realtime Analysis Coaching Systems | [Devpost](#) | [GitHub](#) Feb 2024, Queen's University

- Achieved **3rd Best Hack** in **QHacks 2024** (out of **200+ participants**).
- Developed an accessible, real-time **React web app** for **tennis analysis and coaching**, implementing **computer vision algorithms** and a **CRNN** powered by **OpenCV** and **TensorFlow**.
- Effectively tracks **rapid ball and human movements in 3D space** from a singular viewpoint and delivers personalized insights to enhance the skills of tennis enthusiasts.

Automatic Speech Recognition Neural Network | [Read](#) | [GitHub](#) Jun 2022 - Jan 2023

- Published a machine learning research paper on **automatic speech recognition** that investigated the performances of different **speech feature extraction algorithms** in ASR systems.
- Trained a **deep bidirectional GRU network** using **TensorFlow** to accurately transcribe continuous speech data using varying audio feature extraction algorithms, such as Mel spectrograms, Mel-Frequency Cepstral Coefficients (MFCCs), and discrete wavelet transforms.

Technical Skills

Languages: C/C++, Python, Java, JavaScript, TypeScript, C#, SQL, HTML, PHP, CSS, Bash

Libraries and Frameworks: TensorFlow, PyTorch, Node, React/Next.js, TailwindCSS, Flask, React Native, Selenium

Platforms, Technologies, and Knowledge: Software testing, Git, AWS, QNX SDP, Linux/Unix, Jenkins, DSA