

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 - GPA: 3.9/4.0 Sep 2023 – Present

Experience

Blackberry QNX Jan 2025 – Apr 2025
Software Developer in Test Kanata, Ontario

- Improved testing accuracy by **20%** by developing tools and automated tests in **Python, C, and Bash** to support **QNX systems** and **address client patch requests**.
- Reduced setup time for remote teams by **40%** by designing and deploying a **scalable, permanent network testing environment**, enabling seamless access for **APAC and EU** development teams.
- Increased test coverage for **QNX's RTOS** by **15%** by implementing **automated Pytest-based tests** for the network stack, ensuring compliance with safety certification standards.

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

- Managed the **autonomous and lighting software subteams** during the **FRC 2022-2023** build season.
- Organized in-person and remote workshops for **120+ children**, sparking interest in **robotics, software development**, and **engineering** through hands-on activities and demonstrations.
- Qualified for the FIRST Championships as **rookies**, becoming the **first team from Ottawa** to qualify in **4 years**.
- Reduced task management time by **30%** by developing a Discord bot using **Node.js** and **PostgreSQL**, streamlining club operations across multiple platforms.

Projects

CloudQ | [Devpost](#) | [GitHub](#) Jan 2025, McGill University

- Won **Best Web 3.0 Hack** at **McHacks 12** (competing against **450+ participants**).
- Decreased queue times by more than **50%** by deploying a **decentralized, virtual queue management system** powered by **blockchain technology**, ensuring **efficient line-free queues** for events.
- Developed a modern, responsive UI using **React.js**, **Vite**, and **TailwindCSS**, integrating **Auth0**, **Starknet**, and **Twilio** for authentication, smart contracts, and SMS notifications.

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

- Secured **3rd place overall** at **QHacks 2024** (competing against **200+ participants**).
- Developed a **real-time tennis analysis tool** that utilizes **OpenCV** and **Tensorflow** to improve player performance through **detailed gameplay-derived insights**.
- Tracked rapid ball and player movements from a **single viewpoint** with **90% accuracy**, using a **convolutional recurrent neural network**, eliminating the need for expensive Hawk-Eye technology.

Automatic Speech Recognition Neural Network | [Academia](#) | [GitHub](#) Jun 2022 - Jan 2023, IB Diploma

- Achieved a **perfect score (7/7)** on my IB Diploma Extended Essay for publishing a **machine learning research paper** on **automatic speech recognition neural networks**.
- Improved real-time transcription accuracy and performance from **65%** to **95%** by training a **deep bidirectional GRU network** using **TensorFlow** and advanced feature extraction algorithms.

Technical Skills

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

Libraries and Frameworks: TensorFlow, PyTorch, Node, React/Next.js, Angular, Flask, REST APIs, Starknet

Platforms & Technologies: Atlassian tool suite, Git/SVN, AWS, Web 3.0, Containerized Systems, Linux/Unix