

Declan Chan

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Summary

First-year Engineering Science student at the University of Toronto with experience in machine learning research, aerospace systems, robotics, and software development.

Education

Undergraduate Program in Engineering Science – University of Toronto

2025–Present

- 2× Dean's Honours List

International Baccalaureate Diploma Programme – Maple High School

2021–2025

- IB Score: 45/45
- Director's Achievement Award

Skills and Proficiencies

Programming: Python, C, MATLAB, Bash, Git

Design: SolidWorks, OnShape

Experiences

Machine Learning Researcher – AutoDIAL

2026–Present

- Autonomous Discovery of Alloys (AutoDIAL) research group member.
- Evaluated the robustness of Machine Learning Force Field models using adversarial attacks.
- Implemented workflows using Python, PyTorch, and Jupyter Notebook.
- Ran experiments using Bash, Slurm, and GPUs on Canada's Fir HPC cluster.

Space Systems Engineer – University of Toronto Aerospace Team

2026–Present

- Contributed to CubeSat attitude determination and control systems.
- Simulated magnetic environments using a Helmholtz cage and MATLAB.

Senior Karate Instructor – Northern Karate Schools

2021–Present

- Yondan: Certified 4th Degree Black Belt.
- Certification: Blended Standard First Aid & CPR/AED Level C.
- Gold medal at the Toronto International Tournament of Martial Arts Champions.
- Teach 100+ kids, teens, and adults every week through group and private lessons.

Mechanical Design Engineer – Robotics for Space Exploration

2025–2026

- Designed robotic arm components using CAD for 3D modelling.
- Performed Finite Element Analysis using SolidWorks Simulation to evaluate designs.

Projects

GenAI Genesis Hackathon

2026

- Developed an interactive platform visualizing human disease progression as a team of four.
- Implemented a RAG system trained on PubMed data via IBM watsonx.ai.
- Leveraged Agentic AI with React and three.js to build a 3D web application.

Civil Engineering Bridge Competition

2025

- Optimized structural performance and prototyped a matboard bridge using Python.
- Placed 2nd out of 75 teams in Engineering Science as a team of four.

NFT Automation

2021–2022

- Programmed a macro to create NFTs on OpenSea.io with Ethereum.
- Explored the Polygon Ethereum blockchain scaling solution.

Extracurricular Achievements

Rubik's Cube Competitions

2022–2025

- Top 90 in Canada for 3x3x3 fewest moves.
- Volunteered as a judge for the World Cube Association.
- Club President who taught beginners and organized school-wide competitions.

Varsity Volleyball

2022–2025

- Team Captain in Grade 10 and 12.
- Tier 1 YRAA Championship junior varsity second place.
- Tier 1 YRAA Championship senior varsity second place.

Rep Volleyball

2019–2023

- Team Captain and 2× MVP.
- Silver medal in Canada's 2023 Youth Nationals.

Music Performance

2014–2023

- Theory and Instrumental: Level 10 RCM comprehensive certificate (First Class Honors).
- Level 10 RCM practical piano certificate (First Class Honors with Distinction).
- Level 8 RCM practical violin certificate (First Class Honors with Distinction).