

David Chu

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PROFILE

I am a third year Engineering Science student at the University of Toronto. I am specializing in the Machine Intelligence major. I have strong analytical, problem-solving and organizational skills given my field of study and full course loads of 30+ hours of classes per week. My cumulative GPA is 3.83/4.00. I am known for my ability to manage a full schedule of academic and extracurricular activities, and to enjoy success at both. I am well-versed at being in a leadership position and public speaking given my student council, coaching and other volunteer and community-building activities.

PROGRAMMING LANGUAGES

- **Numeric Computing:** Python (*NumPy*, *PyTorch*, *OpenCV*, *Pandas*) and MATLAB
- **Full-stack development:** HTML, JavaScript (*JQuery*), Python (*Flask*), and SQL
- **Low-level/ Hardware** (*limited experience*): C/C++, Verilog, and ARM assembly

ACADEMIC ACHIEVEMENTS

Bachelor of Applied Science in Engineering Science, University of Toronto (2018-2022)

- Well-versed in working in a team environment and communicating complex ideas
- Familiar with working at the intersection of math, science and engineering science and deriving results from first principles

Ontario Secondary School Diploma, North Toronto Collegiate Institute (2014-2018)

- **Graduation awards:** NTCI Bronze Scholarship Award (third highest graduating average of 96.2%)
- Cross Country and Track & Field Metro Qualifier (2014-2018)

WORK EXPERIENCE

Regulatory Engineering Intern, Kepler Communications (2020)

- Full-stack development using Flask, SQL, HTML, CSS, and JavaScript
- Designed and implemented a secure database to store and retrieve international laws and regulations. Created UI to create, view, and modify entries on dynamic webpage
- Created interactive map to allow user to click on countries and view the radiofrequency emission laws relevant to the country
- Researched data structures and algorithms to optimize the run-time efficiency for tracing satellite's radiofrequency emissions along Earth's surface

Sailing Instructor, The National Yacht Club (2019)

- Coached sailors at the pre-race level in the competitive C420 sailboat class
- Provided athletic, tactical, and mental training. Acted as support person to young athletes

PROJECT HIGHLIGHTS

Deep Learning Coin Counter (2020)

- Implemented processing and labelling images before training as the data science lead
- Created visualization tools for analyzing the neural network's data
- Our group leveraged state-of-the-art computer vision architecture (YOLO v4)
- Available at <https://github.com/ece324-2020/CabbageJumble-aya>

Real-time Target Tracking with Computer Vision (2020)

- Spearheaded computer vision for a robotics project using Python's OpenCV library
- Created software to find and track target in real-time
- Available at https://github.com/thedavidchu/esc204_charging_port_finder

Chess AI (2019)

- Programmed an AI to analyze a virtual chess board using a decision tree and alpha-beta pruning to ensure runtime within the design specifications
- Optimized performance within domain of legal moves
- Available at https://github.com/thedavidchu/csc190_EZ_chess_player

EXTRA-CURRICULAR AND HOBBIES

Violist, The University of Toronto Campus Philharmonic Orchestra (2019-2020)

- Rehearsed and performed pieces including Beethoven's Fifth Symphony and Swan Lake

Sailboat Racing in the 'C-420 class'

- **U of T Race Team** (2018-2020), representing University of Toronto at a collegiate level. Travel and compete at other universities across eastern Canada
- **Ontario Sailing Team** (2018), representing Ontario at nation-wide events such as the Canadian Olympic-training Regatta, Kingston (CORK)
- **National Yacht Club Race Team** (2016-2018), representing the National Yacht Club

President of Student Council, North Toronto Collegiate Institute (2017-2018)

- Elected position responsible for leading a Student Council of ten and organizing school events
- Addressed pressing issues between the student body (1 200), teachers and parents on a wide range of ideas and events. Our annual budget was \$30 000.

ACHIEVEMENTS AND AWARDS

- **Duke of Edinburgh Silver Award** – Currently a Gold-Level candidate (2018 - present)
- **Dean's Honour List, University of Toronto** – For academic excellence (Fall 2018, Winter 2019, Fall 2019, Winter 2020)
- **\$5000 Entrance Scholarship, University of Toronto** – For being a top candidate for Engineering Science (2018)
- **CANSail 6, Sail Canada** (2018)
- **Royal Conservatory of Music - Piano, Level 9, First Class Honours** (2018)
- **Black Belt, Yudansha Kobujitsu Karate-doh Federation** (2016)
- **Chief Scout Award, Scouts Canada** (2014)
- **Bronze Cross Certification, Royal Life Saving Society of Canada** (2014)