

SKILLS AND QUALIFICATIONS

Programming: Python, JavaScript (React), HTML, Java, C/C++, MATLAB, VB;
MongoDB, Tensorflow, Keras, Object Oriented Programming

Research: Apparatus Design and Testing; Data Analysis and Processing; Custom Numerical Simulation and Calculation Tools [made using numpy/scipy]

CAD and Simulation: Autodesk Inventor, Fusion360, NASA GMAT, AGI STK

Design: Requirements Development and Tracking, Stakeholder Engagement; Prototyping and Light Fabrication; Design Reviews and Critique, Technical Writing

Leadership and Communication: Experienced as team lead, coordinating with 30+ member teams; take initiative to meet tight deadlines and maintain organization

PROFESSIONAL EXPERIENCE

University of Toronto Aerospace Team (UTAT), Space Systems Division
Orbit Subsystem Lead | 2020/03 to Present

UTAT Space Systems is a design team working on launching a cubesat into space.

- Responsible for selection of satellite orbit to fulfill hyperspectral imaging mission.
- Creating accurate simulations based on mission requirements, and integrating results into design of satellite hardware using GMAT and STK software as well as parameter calculations.
- Leading small team; responsible for delegation of work, coordination with 12 other system teams in weekly meetings, design reviews, work sessions, giving technical presentations.

Vutha Lab, Department of Physics, University of Toronto

Student Researcher, ESROP Student Research Fellowship | 2020/05-08

Professor Amar Vutha's lab uses atoms and molecules to develop new tools for precision measurements, with optical atomic clocks and ion spectroscopy.

- Developing Biot-Savart solver to determine magnetic field around an arbitrarily shaped coil, for use with design of a high precision hydrogen transition experiment

SET Foundation (setottawa.com)

Chief Marketing Officer/National Executive Board | 2018/03 to Present

SET is a student-led group operating a yearly STEM based conference for students.

- Built website (2018), developed marketing strategy, managed social media to attract attendees.
- Coordinated operations between several schools across the city to promote the conference.
- Lead designer of case competition for 2018 conference involving the design, fabrication, and testing of small-scale electrically propelled vehicles, with great results at the conference.
- Recruited and personally mentored new high school students to run the 2019/2020 conference.
- Working on the logistics of future conferences and pilot projects to reach out to new audiences.

Ottawa Public Library Chess

Chess Club Chief Organizer | 2015/09 to 2019/04

Weekly chess club freely available to students of all backgrounds.

- Planned, created, and delivered lessons to students, as well as providing 1-on-1 mentorship.
- Ran the club as sole instructor since 2017, organizing tournaments and events on the side.
- Won the Ontario Volunteer Distinction Award for excellent service.

EDUCATION

University of Toronto

BASc in Engineering Science
Anticipated in 2024

Colonel By Secondary School

OSSD (French Immersion) and IB
Diploma completed in 2019

- Governor's Award for highest graduating average in school
- D.A. Moodie Award for highest scholastic achievement in Ottawa school board (97.31%)

International Baccalaureate

Diploma (Top 4% of candidates)

DELFB2 (Fluent in French)

PROJECTS

Natural Language Processing

Using multiple approaches, including LSTM Recurrent Neural Networks and N-Gram models to produce semi-realistic human text.

- Processes 2 million character corpus in under 5 seconds, allowing for realtime model generation in dynamic user environments such as web chat
- Modular and extensible; used in my Discord bot

Multipurpose Discord Bot

github.com/itchono/Comrade

Highly configurable platform for managing and providing extra functionality to Discord servers.

- Highly reliable and fast MongoDB based storage
- Local caching system to improve speed while optimizing memory usage
- Custom interpreted scripting language allows user written programs!
- Custom built graphing calculator
- 24/7 uptime and continuous deployment with Kube and Docker

Compact Solar Still

Passive solar-powered distillation system for water processing; [Ottawa Regional Science Fair prize winner](#)