

# JESSICA TANG

**Languages:** Python, C++, C, MATLAB, HTML, CSS, JavaScript

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## EDUCATION

### University of Toronto

Sept 2022 - Present

Bachelor of Applied Science in Engineering Science (Machine Learning)

CS and Math courses: Computer Programming I, Data Structures & Algorithms, Linear Algebra, Calculus I & II

### Simon Fraser University

Sept 2021 - Apr 2022

Grade 12 Dual Enrollment: Computer Programming I & II

## EXPERIENCE

### UofT Cognitive Neuroscience Lab | Machine Learning Researcher

May 2023 - Present

- Designing CNN architectures and training neural networks to optimize robotic arm classification and grasp predictions in modelling biological control systems, reaching a test accuracy of 81.25% (classification) and 78.25% (grasping)
- Designed an automated MATLAB system and performed EEG experiments on 15 participants

### Syllabyte | Full Stack Developer

May 2023 - Present

- Creating a web-based productivity platform with user authentication using React, Django, and Python

### aUToronto | Mapping Team Developer

Sept 2022 - May 2023

- Built a self-driving car: maintained updated, and tested a large Python codebase to automate HD maps for various outdoor environments with JOSM

### Illuminate Academy | Founder, Co-President

Oct 2020 - Present

- Increasing accessibility to interdisciplinary CS/AI education, organized 10 events, garnered 275+ participants from 42 cities and 11 countries, 2 time grant award recipient
- Pioneered organizing the first high school AI Ethics Competition in North America
- Expanding into 5 universities including UofT, McMaster, UBC, SFU, and York University

## PROJECTS & AWARDS

### NSBE Hacks 2023 | Best Overall Project and Winner of the Co:here Challenge

#### Articulator

- Translating speech to sign language to bridge barriers for the hearing-impaired. Developed with Cohere, utilized 6 AI models to recognize, detoxify, analyze sentiment, and launch result

### Toronto Health Datathon 2023 | First Place Winner

#### Cervical Spine Fracture Detection

- Detecting cervical spinal fracture from CT scans and predicting fracture location through segmentation masks, to reduce hospital wait time for patients

### European Space Agency CanSat Competition 2022 | International Finalist and Top Final Report (out of 25 countries)

#### RotaSat

- Designed and built a can-sized satellite with a radio data transmitter and active attitude control system, received 81KB of data over telemetry downlink
- Developed the ground control system software and post-launch data analysis

OTHER AWARDS: **National Top Project** (Canadian CanSat Design Challenge)

### International Student Conference on Artificial Intelligence 2021 | Best Presenter Award

#### Deep Reinforcement Learning Controller for Indoor Farming

- Implemented and trained a Deep Q-Learning Neural Network for the autonomous controller, employing the experience replay memory technique

OTHER AWARDS: **Conference-Published Paper** (International Student Conference on Artificial Intelligence 2021)

**National Finalist** (Ingenious+ Innovation Competition 2022)

**Provincial Top 5 Finalist** (BC Youth Innovation Showcase 2021)

**Provincial Top Project: Greenhouse Growers' Award** (BC/Yukon Science Fair 2021)

#### Facial Emotion Recognition Model using Classification and Convolutional Neural Networks (2020)

- Classified images dataset using various classification algorithms, a convolutional neural network, and implemented the trained model in real time applications