

# Stone Yang

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## EDUCATION

### University of Toronto

Sep 2022 - Present

*Bachelor of Applied Science in Engineering Science | Robotics Engineering Major*

- 2x Dean's Honour List
- **Courses:** Data Structures and Algorithms, Object Oriented Programming, Digital & Computer Systems, Calculus, Linear Algebra, Probability and Statistics, Ordinary Differential Equations

## SKILLS

**Languages:** Python, C, Java, MATLAB, R, HTML, CSS, JavaScript, TypeScript, Arduino, SystemVerilog, RISC-V Assembly

**Tools/Frameworks:** TensorFlow, PyTorch, Keras, React, NextJS, Django, PostgreSQL, Git/Github, Figma, OpenCV, Mediapipe, YOLOv8, NumPy, Pandas, Matplotlib, Scikit-learn, SciPy, LaTeX, Slurm, CUDA, Linux

## EXPERIENCE

### Sunnybrook Research Institute

May 2024 - Present

*Machine Learning Developer | Intern*

*May 2024 - Aug 2024*

- Developed an ML model with **Python & TensorFlow** to detect wear/nonwear in actigraphy devices with **97% accuracy** across **4000+** patients. Automated workflows and reduced data processing time by **20x**
- Collaborated on an ML model to classify sleep/wake from actigraphy data across **500+** patients. Improved model generalizability by **20%** by optimizing input features and fine-tuning signal extraction processes
- Built signal processing and data analysis programs with **Python and R**; managed workloads with **Slurm**

*Machine Learning Developer | Part-time*

*Aug 2024 - Present*

- Optimized performance of wear-detection ML model through hyperparameter tuning and cross-validation with **Python, TensorFlow & Keras**, parallelizing computes with **mpi4py** and **CUDA**
- Trained an ensemble meta-model to improve generalizability and reduce problematic outliers by **90%**
- Preparing findings for publication, contributing advancements to wearable sensor data analysis

### UofT Web Dev | Canadian Institute for Theoretical Astrophysics (CITA)

Jan 2024 - May 2024

*Full-stack Developer*

- Developed a website with **React & NextJS** to provide information on current satellites in the CITA system
- Implemented and styled **5+** web components utilizing various libraries (SplideJS, SwiperJS)

## PROJECTS

### YOLOv10 Pose

Sep 2024 - Present

- Developing a pose detection model with **PyTorch** using **YOLOv10** to address the inefficiencies of YOLOv8-pose models due to non-maximum suppression

### Wave

Oct 2023 - Feb 2024

- Developed a **Python** computer vision program with **OpenCV** that allows users to control their computers through hand gestures
- Engineered a machine learning model using **TensorFlow and Keras**, achieving **95% accuracy** in recognizing **20+** distinct hand signs and actions

### ChefGPT

Nov 2023 - Dec 2023

- Utilized **YOLOv8** and **GPT-4-Vision API** to develop an app that generates food recipes based on photos of the user's fridge