

# Allison Lau

🔗 <https://a-lison-lau.github.io/> ✉ [allison.lau@mail.utoronto.ca](mailto:allison.lau@mail.utoronto.ca)

## EDUCATION

---

### University of Toronto

B.S. in Computer Science (*Specialist*), Physics (*Major*), Mathematics (*Minor*)

Sep 2021 – June 2025

*cGPA: 3.89/4.0*

**Courses:** Computer Graphics, Numerical Methods, Algorithm Design and Analysis, Neural Networks and Deep Learning, Introduction to Image Understanding, Introduction to Visual Computing

**Awards:** Dean's List (2021-2023), NSERC Undergraduate Student Research Award (2024), Class of 3T0 and Associates Scholarship in Mathematics and Physics (2023 - 2024), The Chancellor's Scholarships (2022-2023), University of Toronto Scholar (2021-2022)

## RESEARCH EXPERIENCE

---

### ML and Computational Healthcare, Vector Institute | Advisor: Rahul G. Krishnan

May 2024 -

- Experimental and evaluation plan for algorithm Experior in RLHF

### Medical Computer Vision & Robotics Lab, University of Toronto | Advisor: Lueder Kahrs

Jan 2024 -

- Simulated closure dynamics of rhomboid surgical flaps and determined optimal undermining area of rhomboid skin flap with finite element method (FEM) [1]

### Snyder Lab, Stanford University | Supervisor: Alexander Johansen

Jan. 2024 -

- Extended the python package Wearipedia, specialized in data science, for extracting wearable data, streamlining data extraction processes, generated synthetic data to support clinical research [GitHub]
- Developed Wearipedia usage tutorial notebooks [GitHub]

### Dunlap Institute, University of Toronto | Advisor: Ting Li

May – Aug 2023

- Python scripting to automate testing of CMOS detectors for space imaging
- Conducted comprehensive analysis of critical detector characteristics such as linearity, dark current and salt and pepper noise [2]

### Blue Sky Solar Racing Team, University of Toronto

May 2023 -

- Research in optimal fillet radius of aerobodies by CAD with 3ds CATIA, Pointwise mesh generation and CFD simulation
- Crosswind standardization and journal scripting in PyFluent for conceptual and detailed design of solar car for 2025 World Solar Challenge

## PUBLICATIONS

---

1. **Analyzing the effect of undermining on suture forces during simulated skin flap surgeries with a three-dimensional finite element method** [Paper]

Wenzhangzhi Guo, Allison Tsz Kwan Lau, Joel C. Davies, Vito Forte, Eitan Grinspun, Lueder Alexander Kahrs  
*EG VCBM 2024*

2. **Beyond CCDs: Characterization of sCMOS detectors for optical astronomy**

Aditya Khandelwal, Sarik Jeram, Ryan Dungee, Albert Lau, Phil Van-Lane, Allison Lau, Shaojie Chen, Aaron Tohuvavohu, Ting Li  
*SPIE Astronomical Telescopes + Instrumentation (AS24 Yokohama, Japan)*

## PROJECTS

---

1. **ADAM-Add: Enhancing ADAM with Adaptive Decay Rates** [GitHub][Report]

Lemeng Dai, Allison Lau, Wenrui Wu (*CSC413/2516*)

## SKILLS

---

**Programming:** Python, C/C++, MATLAB, R, HTML/CSS/JavaScript, L<sup>A</sup>T<sub>E</sub>X

**Tools:** Git/GitHub, Unix Shell, VS Code

**Modelling & Graphics:** Blender, 3ds CATIA, 3D Printing, Pointwise, ANSYS Fluent

**Languages:** English, Cantonese, Mandarin, French (conversational)

## COMMUNITY SERVICE

---

### **Vice President, UofT Hong Kong Public Affairs and Social Services Society**

2023

- Editor of annual society publication. Secured sponsorship, collaborated with community partners in club events.

### **Vice President, UofT Cantonese Debate Society**

2023

- Led meetings and organized team training for a team of 10+ members. Facilitated team building activities.