

# Aaron Wei

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## Education

<b>University of British Columbia (UBC)   Faculty of Science</b> BSc in Mathematics and Computer Science (GPA: 3.8/4.33, Dean's List 2025).	September 2021 – May 2026 (Expected)
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## Research

<b>UBC Computer Science Department   Lab of Prof. Danica Sutherland</b>	September 2024 – Present
<ul style="list-style-type: none"><li><i>Conditional independence testing:</i> This is an ongoing project researching the foundations of conditional independence (CI) testing using kernel methods. In the nonparametric setting, vector-valued regression (possibly infinite-dimensional) is a crucial subtask in CI testing. We are currently developing novel methodology to improve this regression and studying how the convergence rates of the regression interact with common test statistics.</li><li><i>Two-sample testing with unequal sample sizes:</i> Analyses of kernel two-sample testing often makes the restrictive assumption of paired data. Our project considers a test-statistic which accommodates unequal sample-sizes using the framework of generalized U-statistics. I made major contributions to the asymptotic theory of this statistic and validated our claim by running simulation experiments on DRAC computer clusters.</li></ul>	

## Employment

<b>UBC Computer Science Department   Research Assistant</b>	May 2025-Present
<ul style="list-style-type: none"><li>Conducting research with Dr. Danica Sutherland, supported by the UBC SURE and AML-TN research awards.</li></ul>	
<b>Hillhouse Education   Instructor On-Call</b>	June 2024 – November 2024
<ul style="list-style-type: none"><li>Provided clear explanations of concepts and assistance with homework and exam preparation for K-12 students.</li><li>Developed an introduction to programming with the Turtle graphics library, effectively teaching basic concepts (e.g. recursion, loops) to primary school students in a visually engaging manner.</li></ul>	
<b>JRG Building Engineering   Structural Engineering Intern</b>	May – August 2021
<ul style="list-style-type: none"><li>Accurately calculated structural loads using Excel and engineering software, contributing to technically sound designs on 7 building projects.</li></ul>	

## Awards

**UBC Enhanced Summer Research Experience Award (2025):** Funding for undergraduate research projects from UBC's faculty of science.

**Advanced Machine Learning Training Network Research Award (2025):** Funding for early-career undergraduate students participating in machine learning research.

**Livingston International Scholarship (2025):** Achievement based scholarship for a child of a Livingston employee.

## Technical Skills

**Programming languages:** Python, Java, C, C++, HTML/CSS, JavaScript, MATLAB.

**Software/libraries:** NumPy, Pandas, PyTorch, Scikit-Learn, Git, Poetry, OpenCV, Scrapy, Google Cloud Platform.

## Technical Projects

<b>Undergraduate Research   Honours Thesis</b>	September 2024 – April 2025
<ul style="list-style-type: none"><li>Research in kernel methods, conditional independence testing, and learning rates for infinite dimensional regression, resulting in a survey of proofs and results for kernel conditional independence testing.</li></ul>	
<b>Research Paper Web Scraping   Personal Project</b>	July 2024
<ul style="list-style-type: none"><li>Curated over 100 cutting-edge research papers by scraping the websites of university reading groups.</li><li>Accomplished the above by creating a policy compliant web scraping protocol in Python using the Scrapy library and Google's Custom Search Engine.</li></ul>	

## Extracurriculars and Volunteering

<b>UBC Undergraduate Mathematics Society   Vice President of Communications</b>	May 2025 – Present
<ul style="list-style-type: none"><li>Respond to inquiries from collaborating clubs and manage corporate sponsorship opportunities.</li><li>Maintained branding and visual identity of club through advertisements and the design of logos and merchandise.</li></ul>	
<b>31st Canadian Undergraduate Mathematics Conference   Organizing Committee</b>	October 2023 – July 2024

- Designed the event logo and various merchandise worn by over 100 attendees, while ensuring the branding objectives of the conference are met.

**UBC Uncrewed Aircraft Systems | Software team**

**September 2022 – December 2023**

- Wrote a Python program to automate image processing tasks such cropping, blurring and colour adjustments, and experimented with Tesseract and OpenCV filters to perform optical character detection.