

Aakanksha Khandwaha

aakanksha.khandwaha [at] uwaterloo [dot] ca | aakanksha.ca

Education

Master of Mathematics (MMath), Computer Science

Sep 2024 - Present

University of Waterloo; Waterloo ON

- Advisor: Dr. Edith Law (Augmented Intelligence Lab & HCI Lab)
- Relevant courses: Human-AI Interaction, Affective Computing, Designing Value-Driven Technology

B.Sc. Joint Honours in Mathematics and Computer Science, Biochemistry Minor

Sep 2020 - May 2024

Mount Allison University; Sackville NB

- Advisors: Dr. Matthew Betti, Dr. Laurie Ricker
- Graduated honours with distinction, Dean's List throughout

Research Experience

Graduate Research Assistant

Sep 2024 - present

Advisor: Dr. Edith Law, University of Waterloo

- Designing a simulated patient system as an educational tool for medical students and professionals to improve their clinical communication skills
- Conducted semi-structured interviews with members of standardized patient educational program, analyzed 20+ hours of qualitative data using grounded theory

Healthcare AI Independent Research Study

Jan - Apr 2024

Title: Large Visual-Language Models for Dermatology Diagnosis

Advisor: Dr. Kathleen C. Fraser, National Research Council Canada

- Evaluated performance of open- and closed-source visual-language models for diagnosing dermatological skin conditions on varying skin tones via different prompting techniques

Formal Methods Independent Research Study

Sep 2023 - Apr 2024

Title: Attack Detection on ICU IoMT via Formal Methods and Machine Learning

Advisor: Dr. Laurie Ricker, Mount Allison University

- Developed a model to detect attacks on an Intensive Care Unit (ICU) Internet of Medical Things (IoMT) network via formal methods (dynamic automata) and machine learning

Undergraduate Summer Research Intern

May - Aug 2023

Advisor: Dr. Amber L. Simpson, Queen's University; Kingston ON

- Developed project on analyzing racial and gender biases in clinical notes, presented this work at the Science Atlantic MSCS Conference, winning first place research award in computer science
- Co-wrote and hosted [The Responsible Use of AI](#) podcast, interviewed 3 multidisciplinary scholars on the implications of AI technologies and tools to ensure it is universally beneficial

AI4Good Lab Fellow

May - Jun 2022

MILA; Montreal QC

- A seven-week AI and machine learning training program for gender minorities with a focus on applications for social good
- Pitched and developed [heAlthics](#), a project evaluating racial bias in skin condition and cancer detection AI models by analyzing the diversity and generalizability of datasets and proposing solutions to mitigate the bias

Summer Research Student

May - Jun 2021; Jul - Aug 2022

Advisor: Dr. Matthew Betti, Mount Allison University

- Mathematically modeled and analyzed COVID-19 data using a modified SIR model to predict future infection rates in Canada. Model utilized by Public Health Canada
- Modified a mathematical ODE model of honeybee colonies to analyze the threshold for hygienic behaviour for multiple hives

Publications and Presentations

Aakanksha Khandwaha and Edith Law. 2025. *Understanding Standardized Patients: Design Priorities for Virtual Patient Learning Technologies*. Submitted to CHI '26 in September 2025.

Aakanksha Khandwaha and Edith Law. 2025. *Designing a Simulated Patient System for Medical Education*. In Proceedings of the 2025 ACM Conference on Conversational User Interfaces.

Aakanksha Khandwaha and Amber Simpson. 2023. *Analyzing Racial and Gender Bias in MIMIC-IV Clinical Notes via Sentiment Analysis*. Science Atlantic MSCS Conference. ★ **Best Presentation Award**

Aakanksha Khandwaha and Matthew Betti. 2021. *Effectiveness of Non-Pharmaceutical Interventions during COVID-19*. Mount Allison University Student Undergraduate Research Fair (SURF).

Awards and Recognitions

| | |
|-------------|--|
| 2025 | Queen Elizabeth II Scholarship in Science & Technology (QEII-GSST) (uWaterloo) — \$15,000 Awarded to top graduate students provincially based on academics, research potential, and leadership |
| 2025 | President's Graduate Scholarship (uWaterloo) — \$10,000 |
| 2024 | McCall McBain Regional Award (McGill University) — \$5,000 |
| 2024 | Scotiabank Graduate Scholarship in Data Science (uWaterloo, <i>declined</i>) — \$10,000 |
| 2023 | Science Atlantic MSCS Conference Undergraduate Research Award (First Place) |
| 2023 | David Gilchrist Chalmers Memorial Prize (Mount Allison University) — \$4,600 |
| 2020 - 2024 | Dean's List (Mount Allison University) |
| 2020 - 2024 | Marjorie Young Bell Scholarship (Mount Allison University) — \$56,000 \$12,000 per year and \$8,000 for personalized internship |

Teaching Experience

Computer Science Teaching Assistant Sep 2024 - present
University of Waterloo

CS492/692: Social Implications of Computing - Winter '25

CS449/649: Human-Computer Interaction - Fall '24, Spring '25

Computer Science, Mathematics, and Biochemistry Teaching Assistant Sep 2021 - Apr 2024
Mount Allison University

COMP1731: Programming Techniques and Algorithms - Winter '23, Winter '24

Math & Computer Science Help Centre - Fall '22, Winter '23, Winter '24

COMP1631: Intro. to Computer Science - Fall '21, Winter '22, Fall '22, Fall '23

MATH1511: Applied Calculus - Fall '21

BIOC1001: Introduction to Biochemistry - Fall '21

- Organized, prepared, and lead TA training for all computer science TAs during Fall '23

Academic Service

ACM Conversational User Interfaces (CUI) 2025 - Student Volunteer Jul 2025
University of Waterloo

- Assisted with organizing paper panels and workshops, ran conference registration booth, and arranged banquet

Computing Research Association (CRA) UR2PhD Program - Graduate Mentor Sep - Dec 2024
University of Waterloo

- Developed research mentorship skills through online graduate student mentor training course, interacting with other graduate students across North America
- Mentored three University of Waterloo undergraduate students, taught HCI concepts through research project developing LLM-driven patient simulations for medical education

Mentoring

| | |
|--------------------|---|
| Sep 2025 - Present | Nate MacLeod - Undergraduate Research Fellow University of Waterloo |
| Sep - Dec 2024 | Sinry Dong, Rachel Philipose, Saivenkat Lohit Jilla - CRA UR2PhD Mentee University of Waterloo |

Community Involvement

Math Graduate Student Association (GSA) - Events Coordinator Oct 2024 - present
University of Waterloo

- Organize social events such as monthly coffee breaks, crocheting workshop, and rock climbing

Technovation Waterloo - Speaker & Judge Feb - May 2025
University of Waterloo

- Presented an introductory lecture to artificial intelligence, with a focus on AI ethics
- Judged the Waterloo Regional Pitch Event and awarded top 3 projects

MtA Hacks - President Sep 2022 - Apr 2024
Mount Allison University

- Lead and organized Mount Allison University's annual computer science conference and hackathon aimed at increasing accessibility to the field for high school and university students across the Maritimes in 2023 and 2024
- Fundraised approx. \$10,000 from local sponsors, collaborated with Amazon, Google, and IBM employees to organize workshops and judge hackathon projects

Women in Science Society - Co-President (2022-24), CS Representative Sep 2020 - Apr 2024
Mount Allison University

- Developed an elementary school outreach program to increase accessibility to STEM
- Hosted a science speaker series with Mt. A alumni and professors to help guide current students in their post-graduate pursuits and form meaningful connections
- Organized social events for female and gender-diverse science students

Girl Up Canada - Lead of Socials (External) Oct 2020 - Feb 2022

- A youth-led non-profit founded by the United Nations Foundation to advance gender equity and justice through Canadian club chapters.

Truro Period Collective (prev. PERIOD @ CEC) - Founder & President May 2019 - Jun 2020

- Founded the first high school menstrual equity chapter in Atlantic Canada
- Spoke as a panelist at the first Nova Scotia Period Poverty Summit in 2019

Skills and Certificates

| | |
|---------|---|
| 2024 | Math and Computer Science Teaching Assistant Certificate (Mount Allison University) |
| 2023/24 | Women in Machine Learning (WiML) Career Mentorship Program (Mentee) |
| 2023 | Bumblekite Machine Learning Summer School in Healthcare and the Biosciences Developed machine learning skills for applications in healthcare via lectures and tutorials held at ETH Zurich, Switzerland. Learned from and interacted with senior executives, leaders & top researchers from Emory, ETH Zürich, Cambridge, Roche, Bayer, Biogen, and Novartis, among others. |
| 2023 | Amii Kickstart Program |
| 2023 | Machine Learning for Health (ML4H) Career Mentorship Program (Mentee) |