

Aakanksha Khandwaha

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Education

Bachelor of Science, Joint Honours in Mathematics and Computer Science 2020-Present
with a minor in Biochemistry

Mount Allison University, Sackville, New Brunswick, Canada

Bumblekite Machine Learning Summer School in Healthcare and the Biosciences July 2023

ETH Zurich, Zurich, Switzerland

International Baccalaureate (IB) Diploma 2017-2020

Cobequid Educational Centre, Truro, Nova Scotia, Canada

Honours and Awards

Marjorie Young Bell Scholarship September 2020 - Present

Value: \$48,000 and \$8,000 for personalized internship, *Mount Allison University*

- Awarded to exceptional high school graduates who demonstrate strong academic ability, leadership capability, volunteer work, extracurricular activities, and good citizenship

1st Place in Undergraduate Computer Science Research Presentation October 2023

Science Atlantic Mathematics, Statistics, and Computer Science (MSCS) Conference, *UPEI*

- Awarded for presentation on analyzing racial and gender biases in MIMIC-IV clinical notes via natural language process (NLP) methods including sentiment analysis

David Gilchrist Chalmers Memorial Prize September 2023

Value: \$4,600, *Mount Allison University*

- Awarded to a Mathematics and Computer Science student who has demonstrated high professional potential, and participated in extra-curricular activities with concern for the welfare of the wider community

Dean's List, *Mount Allison University* 2020 - Present

Medal of Excellence in Mathematics, *Cobequid Educational Centre* May 2020

- Awarded to one Cobequid Educational Centre graduate annually

Lieutenant Governor's Education Medal, *Cobequid Educational Centre* 2019

- Awarded to two grade 11 Cobequid Educational Centre students annually

Research Experience

Undergraduate Honours Thesis Student September 2023 - Present

Advisor: Dr. Laurie Ricker, *Mount Allison University*

- Developing a model to detect Internet of Things (IoT) network attacks via machine learning classification methods, reinforcement learning, and dynamic finite automaton

Undergraduate Research Intern May - August 2023

Advisor: Dr. Amber Simpson, *Queen's University, Kingston, Ontario, Canada*

- Co-wrote and hosted the Responsible Use of A.I. podcast, interviewed 3 multidisciplinary scholars on the implications of AI technologies and tools to ensure it is universally beneficial
- Analyzed biases towards marginalized subgroups (race, gender) in clinician notes via MIMIC database, presented this work at the Science Atlantic MSCS Conference

AI4Good Lab Fellow

May - June 2022

Mila, Montreal, Quebec, Canada

- 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

Research Student

July - August 2022

Advisor: Dr. Matthew Betti, *Mount Allison University*

May - June 2021

- Mathematical modelled and analyzed COVID-19 data using a modified SIR model to predict future infection rates in Canada. Model utilized by Public Health Canada.
- Presented at the [Student Undergraduate Research Fair \(SURF\) Mount Allison](#) outlining the change in effectiveness of non-pharmaceutical interventions (e.g., masking, social distancing) over the course of the coronavirus pandemic
- Modified a mathematical ODE model of honeybee colonies to analyze the threshold for hygienic behaviour for multiple hives.

Community Involvement

Mount Allison Hacks 2023, President

September 2022 - Present

- 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
- Fundraised approx. \$10,000 from local sponsors and New Brunswick technology companies
- Collaborated with Amazon, Google, and IBM employees to organize workshops and judge hackathon projects

Mount Allison Responsible A.I. Club, Founder/Lead Organizer

September 2023 - Present

- Organize biweekly meetings to discuss and learn the computational basis of AI/ML as well as its ethical implications with the aim of demystifying and critically thinking about the field

Mount Allison Women in Science Club

September 2020 - Present

Co-President: 2022/23, 2023/24. Computer Science Representative: 2020/21, 2021/22

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

Enactus Mount Allison

September 2020 - May 2022

President: 2021/22, Research Assistant: 2020/21

- Lead 3 projects (Enviroot, Textbook Osmosis, Greenlight) which aimed to increase environmental sustainability across the Mount Allison and Sackville community
- Developed environmentally friendly particle boards from orange peels and rice glue as Enviroot project researcher

Mount Allison Programming Club

September 2021 - Present

Member, currently ranked 24th on Kattis university leadership board

- Participated in many programming competitions, including the Science Atlantic Canadian programming competition, ICPC NENA Programming Competition, and MAPS

Synced Cooperative (prev. Code Red Co.), Organizer

May 2019 - Present

- A co-powering organization promoting period wellness and de-stigmatization through literacy, aid, and advocacy

- Rotaract Club of Mount Allison**, Executive Member September 2020 - May 2022
- Anti-Racism Judicial Panel**, Member September 2020 - Present
- Divest Mount Allison**, Organizer September 2020 - Present
- Girl Up Canada**, Lead of Socials (External) October 2020 - February 2022
- A youth-led non-profit founded by the United Nations Foundation to advance gender equity and justice through Canadian club chapters.
 - Handled official Girl Up Canada social medias and curated posts highlighting notable women, feminist literature, and different social issues pertaining to Canada.
- Truro Period Collective (prev. PERIOD @ CEC)**, President May 2019 - June 2020
- Founded the 1st high school PERIOD Chapter in Atlantic Canada
 - Spoke as a panelist at the 1st [Nova Scotia Period Poverty Summit](#) in 2019
 - Fundraised \$500 and period products at the Farmer's Market to put products in all bathrooms at CEC and donate to local food bank for menstruators in need

Teaching Experience

Computer Science Teaching Assistant, Mount Allison September 2021 - Present

COMP1631, Introduction to Computer Science: Fall '21, Winter '22, Fall '22, Fall '23

COMP1731, Programming Techniques and Algorithms: Winter '23

- Organized, prepared, and lead TA training for all Mt. A computer science TAs during Fall '23
- Helped students during biweekly lectures, supporting in-class activities
- Marked in-person labs and programming assignments, invigilated tests

Math and Computer Science Help Centre TA, Mount Allison September 2022 - Present

Fall '22, Winter '23

- Ran a weekly help centre for students in first- and second-year math, data science, and computer science courses, helping them with assignments and practice problems

Lab Teaching Assistant, Mount Allison September-December 2021

MATH1511, Applied Calculus: Fall '21

BIOC1001, Introduction to Biochemistry: Fall '21

- Helped students during weekly labs, marked said labs

Kangaroo Math Contest Activity Lead, Mount Allison March 2023

- Lead games of "Fox and Goose" and taught 8–16-year-old kids the mathematical 'trick' behind winning the game every time

Girls Coding Outreach Program, Mount Allison July 2021

- Taught young girls to code using MicroBits and Scratch MIT at the local park.

Skills and Certificates

- Spoken Languages: English (fluent), Hindi (fluent), French (intermediate)
- Programming Languages: Python, Java, C, R, HTML
- AMII Kickstart Program 2023
- CITI Program Data or Specimens Only Research certification