

# Amaan Khan

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## Work Experience

### University of Waterloo, Waterloo, ON— TA work

A non-exhaustive list of my TA work (grading, and hosting tutorials and office hours)

- Math 135: Introductory algebra - Fall 2024
- CO 250: Intro to Optimization - Spring 2025
- CO 602: Intro to Optimization for Graduates - Fall 2025

### University of Waterloo, Waterloo, ON— Maths Tutor

Jan 2024 - April 2024

- Tutored students in all first and second-year maths courses, including Linear Algebra 1 and 2, Calculus 1-3 and Calculus for Sciences
- Marked parts of assessments for select maths courses
- Designed assessment problems (assignments and exams) for select maths courses

### University of Waterloo, Waterloo, ON— Tutoring Centre Coordinator

Sep 2023 - Dec 2023, Sep 2024 - Dec 2024

- Coordinated tutor's schedules weekly to ensure the tutoring centre had sufficient coverage
- Tutored students in all first and second-year maths courses, including Linear Algebra 1 and 2, Calculus 1-3 and Calculus for Sciences.
- Handled all remark requests for Algebra 1, and marked parts of the final assessments
- Created visuals for various mathematical concepts in Manim (via Python), and converted Processing scripts to Manim

### Statistics Canada (StatsCan), Ottawa, ON— Infrastructure Unit Developer

Jan 2023 - May 2023

- Migrated a unit's (CSDP) ticketing protocol from scribble-on-napkin (poor paper trails) to JIRA software (server, with an initiative to move to Data Centre)
- Wrote technical documentation for things created and for things I edited/optimized. Also wrote less-technical user-guides and created training videos for software.
- Automated a variety of processes (including survey intake, client communications, cost estimate and budgeting calculations, English-French translations, and more) using Apache Groovy, Atlassian Apps, and Power Automate.
- Built reports on PowerBI (server and cloud versions) from SQL servers and live webpages
- Built a generic R visuals template to smoothen data processing between different teams
- Built Python scripts to auto-generate JIRA-compatible JSON, accounting for a variety of scenarios for the migration to JIRA Data Centre

## Languages/ Tools

- Fluent in English, French, Urdu
- C/C++
- Python (PyTorch, Manim)
- Processing (Java)
- Maple
- LaTeX
- Microsoft Azure
- Atlassian Apps (Apache Groovy, JQL)
- R
- G Suite
- SQL
- PowerBI (incl. DAX)
- JSON
- MS Power Apps

## Awards

- Shining Star (2022)
  - Awarded to employees of QTG that exceed expectations
- University of Waterloo President's Scholarship of Distinction (2020)
  - Awarded to students with an entrance average of 90%+
- Donna Powell IB Learner Profile Award (2018-2019 and 2019-2020)
  - Awarded to student best exemplifying traits of an IB learner
- High School Valedictorian (2020)
- Three-time Alberta Speech and Debate provincial medalist (2015, 2017, 2018)

## **Questrade Technology Group (QTG), Toronto, ON (remote) — Operations Analyst**

May 2022 - Aug 2022

- Recovered, fixed, encrypted, and transferred 2TB of sensitive files from a dated Laserfiche repository to cloud-based solutions (Google Drive and Microsoft Azure Files).
- Worked IT support for various departments within the bank, resolving application and software issues, creating JSM forms integrated with JIRA, and routing clients to departments for help
- Conducted SQL database searches on occasion, including running queries and formulating a PowerBI report of related findings for client usage

## **Microsoft – Azure and Artificial Intelligence Fundamentals, Waterloo, ON (remote) — Project Team Member**

May 2021 - Aug 2021

- Organized and collaborated in daily team meetings to ensure maximized effectiveness of each other's expertise in team projects by communicating across various platforms
- Researched, gathered, and organized data on multiple nutrition applications and their public reception across social media, reviews, blog posts, etc. (including praises and critiques) to find what aspects of the apps failed and what succeeded
- Created the foundations of a technologically and economically feasible AI-based nutrition application designed to help people move towards healthier eating habits by providing ultra-personalized recommendations

## **Self Employed, Edmonton, AB — Tutor**

2013 - Present

- Tutor people of various ages and abilities in maths up to Calc 2 and sciences up to grade 12 in-person or online so they can grasp concepts they find difficult and excel in their courses
- Create personalized curriculums, taking into account the student's mental and physical needs and abilities, to accommodate for all learner types

## **Paul Sadler Swimland, Edmonton, AB — Swim Instructor**

2018 - 2020

- Taught children to swim, from gaining confidence to submerge themselves to swimming 3km non-stop
- Deployed various teaching methods, some self-created, to accommodate for various challenges and/or disabilities, in order to allow the student to progress as swimmers
- Trained future instructors in the role

## **Bellerose CHS, St Albert, AB — Secretary/Treasurer**

2018 - 2020

- Created detailed computerized records of all student council meetings and events in order to later analyze our performance and see where and potentially how to improve for the next occasion
- Created a detailed budget for student events and activities for the years
- Led the council in creating targets and deadlines for the goals of the year, resulting in multiple well-planned events an efficient and effective transition to online learning

## Education

### University of Waterloo, Ontario — *B. Maths*

September 2020 - April 2025

Bachelor of Mathematics, Honours Combinatorics and Optimization (Co-op)

Favourite Courses:

CO 255 - Bill Cook

PMATH 348 - Blake Madill

CO 646 - Peter Nelson

CO 671 - Levent Tunçel

PMATH 950 - Kateryna Tatarko

### University of Waterloo, Ontario — *M.Math*

April 2025 - Present

Masters Combinatorics and Optimization, supervised by Levent Tunçel

## Projects/ Interests

### Bellerose Bike-a-thon — *Bellerose CHS*

May 2019 - March 2020

Led the planning team in creating a budget and fundraisers, resulting in the largest Bellerose Bike-a-thon to date with 860 participants and over \$270 000 raised

### Project 5000 — *Independent*

October 2012

- Locally raised non-perishable food items and managed the production of 5000 food hampers to be delivered to the victims of the 2012 Pakistan floods.
- Gathered a team of volunteers from the local community to help assemble hampers of the donated items

### 1001 Integral challenge — *Independent*

March 2020

Completed 1001 integrals of difficulty varying from Calc 2 to well beyond Calc 3

### Heavy Metal Soil Contamination Study — *Independent*

2018 - 2019

Conducted research on using mycorrhizal fungi in soil within 800 km of a coal power plant to significantly reduce the heavy metal contamination present in the soil.

### Lloyd Auckland Invitational Workshop — *CEMC Waterloo*

May 2019

Invited to and attended a maths workshop for achieving top 80 in the Fermat maths contest.

### IFSSA volunteer — *Islamic Family*

2012 -2020

Regularly (at least weekly) volunteered at Islamic Family (formerly IFSSA),

creating food hampers for those in need, delivering food/clothing,  
volunteering at social service events run by IFSSA (including a food kitchen  
from 2015-2018)