

# Moeez Muhammad

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## Education

**B.Sc, Honours Mathematics**

**2022-2025 (expected)**

McGill University

**Courses:** Probability; Graph Theory; Algorithms and Data Structures; Graduate Combinatorics; Real Analysis; Theory of Computation; Classical Mechanics

- Workshop director for competitive programming club
- Wrote [official lecture notes](#) on “Disjoint-Set Union” for Algorithms class

## Contests, Awards, and Test Scores

- **1<sup>st</sup> place** at McGill CodeJam (hackathon) 2023
- **Summer Undergraduate Research Award (McGill)** (Summer 2023, ~\$7000)
- **Feng Qian Award (McGill)** for computer science (~\$3500)
- Qualified for **ICPC NAC** (North American Championship) in 2023 and 2024
- **1<sup>st</sup> place** at NPCompete 2022, McGill’s programming competition
- **SAT:** 1590 (800 Reading/Writing, 790 Math)
- **Google Computer Science Research Mentorship Program** (Fall/Winter 2022)

## Experience

**Summer Undergraduate Research Project**

**Summer 2023**

- Worked on project on **rigorous fixed-point finding of partial differential equations** with Prof. Jean-Philippe Lessard at McGill, alongside a team at Rutgers University
- **Developed simple and novel techniques** for rigorous computing, and implemented in **MATLAB**
- Topics researched spanned computational algebraic geometry, linear algebra and optimization, and combinatorial and computational geometry
- Gave **presentations every week** to research group on progress
- Read graduate-level textbooks and research papers

## Projects

**Space Invaders Emulator**

Emulator for the original Space Invaders arcade machine hardware and Intel 8080 microprocessor. Includes disassembler for the 8080. Can play WASM version [here](#).

**Chiyodiff**

Small tensor and automatic differentiation library written in C

## Skills

Mathematics, Competitive Programming and Algorithms, C, C++, MATLAB, Python, Pandas, Linux and Bash, LaTeX and Tikz