

Rishi Nair

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EDUCATION

University of Toronto Schools

High School Diploma

Toronto, Canada

September 2017 – present

Relevant Course Work: AP Computer Science Principles, AP Computer Science A, AP Calculus, AP Physics 1, AP Physics 2, AP Economics, AP Biology, AP Chemistry, AP Statistics

Clubs: Math Society, Physics Club, Duke of Edinburgh Club

PUBLICATION

- R. Nair, An Introduction to Knot Theory, *Crux Mathematicorum*, Canadian Mathematical Society, Vol. 48, No.4, 2022, pp. 199-207. <https://cms.math.ca/publications/crux/issue/?volume=48&issue=4>

EXPERIENCE

University of Toronto Schools

Executive Committee, Physics Club

Toronto, Canada

September 2021 – present

- Tutored junior students for physics contests.
- Responsible for outreach activities of the club.
- In charge of organizing electronic resources and website maintenance.

University of Toronto Schools

Executive Committee, Math Society

Toronto, Canada

September 2022 – present

- Pod leader responsible for tutoring a group of junior students for math contests.

University of Toronto

Math Academy Summer Program, Department of Mathematics

Toronto, Canada

August 2022

- Accepted into a competitive math summer program on graph theory based on performance on a written exam.
- Learned about Eulerian circuits, tree graphs, bipartite graphs, and graph colourings.
- Currently preparing a series of lecture notes/blog articles on graph theory and its applications.

University of Toronto

Math Mentorship Program, Department of Mathematics

Toronto, Canada

January 2022 – May 2022

- Reviewed the literature on elliptical-curve cryptography and set theory.
- Biweekly meetings with my mentor to discuss concepts learned.
- Gave a short 10 minute presentation to other mentors and mentees in the program on the basic principles of elliptical-curve cryptography.

University of Toronto

Math Academy Summer Program, Department of Mathematics

Toronto, Canada

June 2021

- Accepted into a competitive math summer program on knot theory based on performance on a written exam.
- Topics covered included Reidmeister movements, basic topology, knot invariants, knot polynomials and multidimensional knots.
- Wrote an expository article on knot theory aimed at high school and college students (published in *Crux Mathematicorum*, a journal of the Canadian Mathematical Society).

qBraid

Quantum Computing Course

Toronto, Canada

June 2021 - August 2021

- Learned about the basics of quantum mechanics, linear algebra and classic computing.
- Introduced to concepts such as qubits, quantum gates, and programming quantum algorithms.
- Learned about some interesting phenomena in quantum computing such as superposition, interference and entanglement.

University of Toronto

Global Engineering Challenge, Faculty of Applied Science and Engineering

Toronto, Canada

August 2021

- Gained practical experience in data visualization using Python packages such as Matplotlib, Seaborn, Folium and Pandas.
- Learned about dataframes, data cleaning and visualization of geographical data.
- Worked on a group project involving the visualization and extraction of statistics from data on the 2019 wildfires in the state of New York.

Music Youtube Channel

<https://www.youtube.com/channel/UCPyfFCjcz2fwpirlrTIhRDg>

Toronto, Canada

August 2020 – present

- Recorded, mixed and mastered audio in Logic Pro.
- Recorded and edited videos in Final Cut Pro.
- Played guitar covers and composed original music tracks.
- Attracted a total of 13.4k+ views.

SKILLS

Programming Languages Software

Python, Java, JavaScript, C++
L^AT_EX, Final Cut Pro, Logic Pro, Adobe Illustrator,
Adobe Photoshop, Google Suite

AWARDS AND ACHIEVEMENTS

- Winner of the MathemAttic article contest organized by the Canadian Mathematical Society in 2022.
- Honor roll on the 2022 Canadian National Math League.
- Honor roll on the 2021 American Mathematics Competitions (AMC) 10A contest (Top 2.5% out of 24817 students worldwide).
- Scored a 5 on the AP Computer Science Principles and AP Physics 1 exam.
- Honor roll on the 2020 Pascal Contest organized by the Center of Education in Mathematics and Computing at the University of Waterloo.
- National Champion in the 2019 Fryer Contest organized by the Center of Education in Mathematics and Computing at the University of Waterloo.
- Awarded certificate of distinction in the 2019 Canadian Intermediate Mathematics Contest (CIMC) organized by the Center of Education in Mathematics and Computing at the University of Waterloo.

COMMUNITY SERVICE

- Event assistant, David Dunlap Observatory, 2022.
- Volunteer, Fall Open House, Richmond Hill Centre for the Performing Arts, 2022.
- Volunteer, Daily Food Bank, 2017–Present.
- Food drive organizer, Daily Bread Food Bank, 2021.
- Action project participant, Conservation Youth Corps, 2021–2022.