Sacha Goldman

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Education

MSc in Mathematics University of Toronto   September 2023 - August 2024

Fully funded program encompassing both course work and research. Thesis focused on understanding algebraic aspects of simple homotopy theory, supervised by Alexander Kupers.

BSc in Mathematics and Computer Science University of Toronto   September 2019 - June 2023

Focused on math and applications to computer science. Studying differential and algebraic topology, algebra, differential geometry, machine learning, and quantum computing.

Research

Undergraduate Summer Research The Torelli Lie Algebra

Working with Alexander Kupers and Daniel Litt on studying the centre of the Torelli Lie algebra.

Awards

Coxeter Scholarship in Mathematics University of Toronto   2024

Undergraduate Summer Research Award National Sciences and Engineering Research Council   2023

Raptors Foundation In-Course Scholarship New College   2023

In-Course Scholarship New College   2022

In-Course Scholarship New College   2021

William and Shirley Reed Scholarship VSB   2019

Teaching

MAT185 Teaching Assistant University of Toronto   January 2024 - April 2024

Running tutorials and grading for a proof based linear algebra course.

Math Learning Centre Teaching Assistant University of Toronto   January 2024 - April 2024

Helping students at the math learning centre.

MAT186 Teaching Assistant University of Toronto   September 2023 - December 2023

Running tutorials and grading for a differential and integral calculus course.

CSC236 Teaching Assistant University of Toronto   September 2021 - December 2021

Running tutorials and grading for a course introducing mathematics for computer science.

Employment

Software Engineer Intern Apple   May 2022 - August 2022

Worked on the team architecting Apple Media Apps solving unique technical challenges.

Software Developer Intern SSENSE   May 2021 - August 2021

Worked on the iOS team facilitating a transition to the composable architecture and SwiftUI.

Speaking

Birds Eye Conference University of Toronto   2024

An expository talk about rational homotopy theory and Sullivan's minimal models.

Graduate Student Seminar University of Toronto   2024

An expository talk about the calculation of homotopy groups of spheres.

Canadian Undergraduate Mathematics Conference University of Toronto   2023

An expository talk about using the Hopf fibration to calculate $\pi_3(S^2)$.

Service

Academic Committee Math Graduate Student Association   September 2023 - August 2024

Helping to organize academic events and the graduate student seminar.

Technical Proficiencies

SageMath, Lean, Python, C, LaTeX, Git, Shell