

# Sacha Goldman

Email [sacha.goldman@mail.utoronto.ca](mailto:sacha.goldman@mail.utoronto.ca)

Website [sachagoldman.com](http://sachagoldman.com)

## Education

**PhD in Mathematics** [University of Toronto](#)

September 2023 –

Supervised by Alexander Kupers.

**MSc in Mathematics** [University of Toronto](#)

September 2023 – September 2024

Supervised by Alexander Kupers. Thesis: Properties of Automorphisms of Spaces with Cyclic-by-Finite Fundamental Group

**BSc in Mathematics and Computer Science** [University of Toronto](#)

September 2019 – June 2023

## Papers and Preprints

**The Torsion of Automorphisms of Nilpotent Spaces** [arXiv](#)

January 2026

## Awards

**Ontario Graduate Scholarship** [Province of Ontario](#)

2025 – 2026

**Canadian Graduate Scholarship – Master's** [National Sciences and Engineering Research Council](#)

2024 – 2025

**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

**MAT257 Teaching Assistant** [University of Toronto](#)

September 2024 – April 2026

Running tutorials, holding office hours, and grading for a course covering calculus on manifolds.

**MAT1300 Teaching Assistant** [University of Toronto](#)

September 2024 – December 2024

Grading for a graduate course on differential topology.

**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.

# Speaking

<b>Birds Eye Conference</b> <a href="#">University of Toronto</a>	2026
An expository talk about Configuration spaces and braid groups.	
<b>Synthetic Spectra Learning Seminar</b> <a href="#">University of Toronto</a>	2025
An expository talk about Patchkoria–Pstrągowski's proof of Franke's algebracity conjecture.	
<b>Locally Trivial Seminar</b> <a href="#">University of Toronto</a>	2025
A talk about ongoing joint work with Jonathan Sejr Pedersen and Marco Volpe studying signatures of manifold bundles.	
<b>Local Systems and Simple Homotopy Theory</b> <a href="#">Young Homotopy Theorists Meeting</a>	2025
A poster about work, partially joint with Marco Volpe, on simple homotopy theory using local systems of spectra.	
<b>Summer Kan Seminar</b> <a href="#">University of Toronto</a>	2025
An expository talk about the Sullivan conjecture.	
<b>Simple Homotopy Week</b> <a href="#">University of Toronto</a>	2025
Two talks, one on Waldhausen's construction of the assembly map and the other on a proof of the topological Dwyer–Weiss–Williams theorem.	
<b>Locally Trivial Seminar</b> <a href="#">University of Toronto</a>	2025
Speaking about local systems in geometric topology, specifically relating to the Euler characteristic, the Wall finiteness obstruction, and the Whitehead torsion.	
<b>Cohomology of the General Linear Group Learning Seminar</b> <a href="#">University of Toronto</a>	2024
An expository talk about the $K$ -theory of finite fields.	
<b>Ontario Graduate Mathematics Conference</b> <a href="#">University of Waterloo</a>	2024
Speaking about finiteness properties of some automorphism groups of manifolds.	
<b>Birds Eye Conference</b> <a href="#">University of Toronto</a>	2024
An expository talk about rational homotopy theory and Sullivan's minimal models.	
<b>Graduate Student Seminar</b> <a href="#">University of Toronto</a>	2024
An expository talk about the calculation of homotopy groups of spheres.	
<b>Canadian Undergraduate Mathematics Conference</b> <a href="#">University of Toronto</a>	2023
An expository talk about using the Hopf fibration to calculate $\pi_3(S^2)$ .	

# Service

<b>Locally Trivial Seminar</b> <a href="#">University of Toronto</a>	January 2025 –
A student seminar I started with Jonathan Pedersen on topics loosely related to algebraic topology.	
<b>Readings on Signatures of High-Dimensional Knots</b> <a href="#">Directed Reading Program</a>	January 2026 – April 2026
Supervising a group of undergraduate students reading about high dimensional knots and signatures of knots.	
<b>Readings on Topological <math>K</math>-Theory</b> <a href="#">Directed Reading Program</a>	January 2025 – April 2025
Supervising a group of undergraduate students reading about topological $K$ -theory and the Hopf invariant one problem.	
<b>Graduate Student Seminar Organizer</b> <a href="#">Math Graduate Student Association</a>	September 2024 – August 2025
Organizing the University of Toronto's mathematics graduate student seminar.	
<b>Academic Committee</b> <a href="#">Math Graduate Student Association</a>	September 2023 – August 2024
Helping to organize academic events and the graduate student seminar.	

# 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.

## **Software Developer Intern** Altairix

May 2020 – August 2020

Worked on the web based learning platform for students with disabilities.

# Misc

## **Canadian Citizen**

## **American Citizen**