

Aidan Lorenz

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EDUCATION

Vanderbilt University, College of Arts and Science

Ph.D. Candidate in Mathematics; Adviser: Dr. Spencer Dowdall

Nashville, TN

Aug. 2019 – May 2024 (expected)

Vanderbilt University, College of Arts and Science

M.A. in Mathematics; Adviser: Dr. Spencer Dowdall

Nashville, TN

Aug. 2019 – May 2023

Temple University, College of Science and Technology, Honors Program

B.S., Mathematics & Physics; Certificate, Programming; Magna Cum Laude

Philadelphia, PA

Aug. 2015 – May 2019

EXPERIENCE

Participant, Data Science Bootcamp

Erdős Institute

August - December 2023

Virtual

- Took semester-long intensive course on Machine Learning and attended industry seminars given by Data Scientists and AI/ML Engineers.
- Completed a group project using neural networks to build a beer recommender system.

Participant, Math to Industry Bootcamp

University of Minnesota, Institute for Mathematics and its Applications

June - July 2023

Virtual

- Took intensive courses on data science, statistics, machine learning, optimization, and modeling in R and Python.
- Worked with a group at Pacific Northwest National Laboratory on assessing robustness of deep learning models.

Summer Research Project

Cornell University

Summer 2018

Ithaca, NY

- Studied generating sets of finite groups under Dr. Keith Dennis.
- Paper appeared in Communications in Algebra (see below).

Undergraduate Research Program

Temple University

May 2017 – Aug. 2019

Philadelphia, PA

- Studied “shadows” of the Grothendieck-Teichmüller group under Dr. Vasily Dolgushev.
- Accepted to Algebraic & Geometric Topology. Preprint: [arXiv:2008.00066](https://arxiv.org/abs/2008.00066)

Budapest Semesters in Mathematics Summer Program

Budapest Semesters in Mathematics

Summer 2016

Budapest, Hungary

- Took classes in Combinatorics and Abstract Algebra
- 8 credits, 4.00 GPA

PUBLICATIONS

1. (With Vasily Dolgushev and Khanh Le) **What are GT-shadows?** (accepted to Algebraic & Geometric Topology)
2. (With David Cueto Noval and Baran Zadeoğlu) **On the replacement property for $\mathrm{PSL}(2,p)$.** Communications in Algebra, 49:11, 4970-4979 (2021)

TEACHING

Instructor of Record - Math 2820L Statistics Laboratory	Vanderbilt University, Fall 2023
Teaching Assistant - Math 1301 Accelerated Single Variable Calculus II	Vanderbilt University, Spring 2023
Instructor of Record - Math 1300 Accelerated Single Variable Calculus I	Vanderbilt University, Fall 2022
Certificate in College Teaching	Vanderbilt University Center for Teaching, Fall 2021 – Spring 2022
Teaching Assistant - Math 1201 Single Variable Calculus II	Vanderbilt University, Spring 2022
Instructor of Record - Math 1201 Single Variable Calculus II	Vanderbilt University, Fall 2021
Teaching Assistant - Math 1201 Single Variable Calculus II	Vanderbilt University, Spring 2021
Teaching Assistant - Math 1300 Accelerated Single Variable Calculus I	Vanderbilt University, Fall 2020
Teaching Assistant - Perfect Shuffles, Permutations, and Decimal Expansions	Vanderbilt PTY, Summer 2020

TALKS & POSTERS

Group Theory & Topology Seminar	Vanderbilt University, Nov. 2023
• Small Dilatation Homeomorphisms Coming From Dehn Fillings of 3-Manifolds	
Number Theory Seminar	Vanderbilt University, Nov. 2023
• The Number Theory of Small Dilatation Homeomorphisms	
Graduate Student Seminar	Vanderbilt University, Oct. 2023
• Introduction to the Curve Complex	
World of Groupcraft III	Virtual, Sep. 2023
• Sequences of Small Dilatation Homeomorphisms	
Undergraduate Student Seminar	Vanderbilt University, Dec. 2022
• The Mathematics of Rubik's Cube	
Graduate Student Seminar	Vanderbilt University, Apr. 2022
• Least Dilatation Problems	
Philadelphia Undergraduate Mathematics Conference	Temple University, Mar. 2019
• On the Replacement Property for $\mathrm{PSL}(2, p)$	
Algebra Seminar	Temple University, Feb. 2019
• On the Replacement Property for $\mathrm{PSL}(2, p)$	
Undergraduate Research Program Poster Session	Temple University, Sep. 2018
• Poster presentation: Generating Sets of Finite Groups	
MAA EPaDel Section Meeting	Temple University, Mar. 2018
• An Introduction to Braid Groups and Free Groups	
Undergraduate Research Program Poster Session	Temple University, Oct. 2017
• Poster presentation: GT-Shadows	

AWARDS & HONORS

B.F. Bryant Prize for Excellence in Teaching	Vanderbilt University, April 2023
Graduated Magna Cum Laude	Temple University, May 2019
Sholomskas Award for Outstanding Students (Mathematics)	Temple University, Apr. 2019
Member, Phi Beta Kappa Honors Society	Temple University, Apr. 2018
Undergraduate Research Program Poster Session Honorable Mention	Temple University, Oct. 2017
Robert A. Figlin Family Research Award	Temple University, Apr. 2017
Most Promising Mathematics Major Award	Temple University, Apr. 2017
Science Scholars Program	Temple University, Aug. 2015 - May 2019
President's Scholarship	Temple University, Aug. 2015 - May 2019
Dean's List	Temple University, Aug. 2015 - May 2019

CONFERENCES & SUMMER SCHOOLS

World of Groupcraft III	Virtual, Sep. 2023
Graduate school on Geometric Group Theory and Low Dimensional Topology	ICMAT Madrid, May 2022
Graduate Student Conference in Topology and Geometry	Georgia Tech, April 2022
Young Geometric Group Theory X	Newcastle University (Virtual), July 2021
Geometric Group Theory Without Boundaries II	Virtual, June 2021
Geometric and Asymptotic Group Theory with Applications (GAGTA) 14	Virtual, June 2021
Graduate Student Conference in Algebra, Geometry, and Topology	Temple University (Virtual), May 2021

PROGRAMMING LANGUAGES

Python, Java, MATLAB, Mathematica, SQL, LaTeX, Sage, R