

# ZACHARY BERENS

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## EDUCATION

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### Princeton University

Ph.D. in Mathematics

August 2025 - ????

### Duke University

B.S. in Mathematics (Advisor: Joseph Rabinoff)

August 2021 - May 2025

## AWARDS

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### University Scholars Program Scholarship Duke University

August 2021 - May 2025

Full-ride merit scholarship awarded to students with a strong interest in interdisciplinary research, collaborative thinking, and innovative academic pursuits. I was one of five students in the Class of 2025 who received the scholarship.

## RESEARCH PROJECTS

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### PRUV Program: Étale Reconstruction Duke University

May 2024 - July 2024

- PRUV is a summer REU in Duke's math department in which students are paired with professors to do research. I proved part of a conjecture of Grothendieck on the reconstruction of schemes from their étale sites.

### PRUV Program: Perfectoid Spaces Duke University

May 2023 - July 2023

- I wrote an expository paper on the sheafyness of perfectoid spaces and the reinterpretation of affinoid spaces and Berkovich spaces in the language of adic spaces.

### Two Proofs of the Gerritzen-Grauert Theorem Duke University

Spring 2023

- I wrote a more readable version of BGR's proof of the Gerritzen-Grauert theorem. I also compared their proof to Temkin's more recent proof.

## MISC. WORK EXPERIENCE

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### Grader Duke Math Department

Spring 2023 - PRESENT

- Grader for MATH 627: Algebraic Geometry (Fall 23 and 24), MATH 602: Commutative Algebra (Spring 23), and part of MATH 501: Abstract Algebra I (Fall 23).

### Tutor The Fundamentals Project

December 2020 – October 2021

- I started a math YouTube channel geared towards exposing high-school students to basic proofs. I provided free math tutoring to high school students through my website. I tutored 5 students in BC calculus.

### Data Miner Earthdiver, LLC.

June 2020 - August 2020

- I used proprietary software to create programs that mined web data.

### Founder Act 3 Theatre, LLC.

October 2018 - March 2020

- I founded and ran a non-profit theatre company. I directed, choreographed, and designed a production of Sweeney Todd which was performed to audiences averaging over 100 people. COVID put an end to other planned productions.

## ACTIVITIES

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### Founder and President [Duke Undergraduate Math Seminar](#)

October 2023 - PRESENT

- Students learn collaboratively by giving expository and research talks.