Nikita Borisov

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Education   **University of Pennsylvania**   Philadelphia, PA
Pursuing Ph.D. (expecting to receive it in 2027)
Advisor: Jim Haglund

Cornell University   Ithaca, NY
B.A. with distinction in all subjects/ Summa Cum Laude in Mathematics-Dec 2021
GPA: 4.19 out of 4.3
Advisor: Martin Kassabov

Stuyvesant High School   New York, NY
Graduated with Advanced Designation with Honors -Jun 2018
GPA: 96.25 out of 100

Publications

[1] N. Borisov, H. Julius, M. Sikora. On maps preserving square roots of idempotent and rank-one nilpotent matrices, *J. Algebra Appl.*, 2021.

Selected Talks

Mathematical introduction to quantum computing   2023
Presented at: U Penn Pizza seminar

Counting graphs with groups: Burnside's Lemma.   2022
Presented at: Cornell Undergraduate Math Club

The linear algebra of quantum information.   2021
Presented at: Cornell Undergraduate Math Club

Square roots of idempotent and nilpotent matrices and their preservers.   2020
Presented at: REU at Kent State

Rings whose derivations are closed under taking compositions.   2020
Presented at: Cornell Undergraduate Math Club

Duffing Differential Equation on the Sierpinski Gasket.   2019
Presented at: SPUR Cornell

Introduction to Calculus of Variations.   2019
Presented at: Cornell Undergraduate Math Club

Teaching

Univeristy of Pennsylvania
Teaching Assistant
- TA for Math 3610: Advanced Calculus (gentle introduction to real analysis)
                                                                    Spring 2024
- Grader for Math 3200: Computational Methods in Mathematical Sciences
                                                                    Fall 2023
- Grader for Math 4100: Complex Analysis
                                                                    Fall 2023

Drexel University
Grader
- Grader for Math 533: Graduate algebra course
                                     Jan 2023 to Apr 2023 and Jan 2024 to Apr 2024
- Grader for Math 222: Combinatorics
                                                                    Fall 2023

MIT BeaverWorks
Teaching Assistant
- Taught high schoolers about quantum algorithms and their implementation using Q# and Python   Jun 2022 to Aug 2022

Cornell Univeristy
Grader/Tutor
- Cornell Math Support Center: Tutor at a walk-in center for students needing help in college courses   Jan 2020 to Dec 2021
- Cornell Summer Session: Tutor at a walk-in center for students taking summer math courses at Cornell   Jun 2021 to Aug 2021
- Math 1105: Finite Mathematics for the Life and Social Sciences
                                                                    Sep 2020 to Dec 2020

Programs and work experience

Macaulay2 Workshop at U of Minnesota: Wrote a package for Macalauy2 based on work of Thomas Brazelton on $\mathbb{A}^1$-Brouwer degrees   Jun 2023

Tutor at PrepNow: One-on-one tutoring for SAT/ACT and AP Calculus

Feb 2022 to May 2022

REU at Kent State: Worked with Professor Mikhail Chebotar on a Linear Preserver Problem (LPP) project   Jun 2020 to Aug 2020

Cornell SPUR (Summer Program in Undergraduate Research): Worked with Professor Robert Strichartz on a fractal differential equation project   Jun 2019 to Jul 2019

MoMath Internship: Interned at the National Museum of Mathematics as a docent helping visitors understand the math behind exhibits   Jan 2017 to Jan 2018

MathILy: Math summer program for high school students   Jul 2017 to Aug 2017

Awards

Benjamin Franklin Fellowship	2022
Kieval Prize in Mathematics at Cornell	2022
Barry Goldwater Scholarship	2021
Phi Beta Kappa Honors Society	2021
Cornell Dean's List	Fall 2018, 2019, 2020, 2021; Spring 2019
Okean Family Memorial Award for Scholarship in Pure Mathematics	2018
Marjorie Tallman Scholarship	2018
Greater New York Math Fair: Gold Medal	2015