Nikita Borisov

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Education

University of Pennsylvania Philadelphia, PA
Pursuing Ph.D. (expecting to receive it in 2027)

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.

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

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.

Grader for Math 533 at Drexel: Graded for graduate algebra course at Drexel University. From Jan 2023 to Apr 2023.

TA for MIT Beaver Works Summer Institute (Quantum Software Group): Taught high schoolers about quantum algorithms and their implementation using Q# and Python. From Jun 2022 to Aug 2022.

Tutor at PrepNow: One-on-one tutoring for SAT/ACT and AP Calculus. From Feb 2022 to May 2022.

Tutor at Cornell Math Support Center: Tutor at a walk-in center for students needing help in college courses. From Jan 2020 to Dec 2021.

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

Tutor at Cornell Summer Session: Tutor at a walk-in center for students taking summer math courses at Cornell. From Jun 2021 to Aug 2021.

Grader for Math 1105: Finite Mathematics for the Life and Social Sciences: From Sep 2020 to Dec 2020.

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

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

MathILy: Math summer program for high school students. From 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*