Ivan V. Morozov

New York, NY   ivanvladmorozov@gmail.com

Summary

Motivated mathematics student and researcher specialising in analysis and combinatorial and analytic number theory. Also studies music composition and clarinet, with experience in cross– disciplinary collaborations in geology, focusing on data analysis and quantitative problem–solving.

Education

Manhattan School of Music   August, 2023 – May, 2027
Bachelor of Music, Classical Clarinet   *New York, NY*

The City College of New York   August, 2023 – May, 2025
Honours Bachelor of Science, Pure Mathematics (2025)   *New York, NY*

Fiorello H. LaGuardia High School of Music & Art   September, 2018 – June, 2022
High School Diploma, Instrumental Music   *New York, NY*

The Juilliard School   September, 2019 – May, 2022
Pre-College Diploma, Clarinet Performance   *New York, NY*

Research Experience

Research Assistant   June, 2024 –
National Aeronautics and Space Administration (NASA)   *New York, NY*

- Title: Surface-based Precipitation Measurement Network in the Bronx: Science and Education Opportunities for Diverse and Minority Students.
- Supervisor: Dr. Yuri Gorokhovich.
- This project aims to add scientific and educational components to existing courses on weather and climate, geospatial data integration, hydrology, and environmental science, providing research experience to students of Lehman College using NASA GPM data and Geographic Information Systems.
- Responsible for preparing and testing teaching materials with Excel and Python.
- This poster was presented at the Annual American Geophysical Union Meeting held in Washington, D.C., December 9–14, 2024.

Research Assistant   October, 2023 –
                                                                              New York, NY

- Title: Innovative Methodology for Real–Time Hurricane Induced Landslides Prediction: A Case Study of Hurricane Maria (2017) in Puerto Rico.
- In collaboration with Lehman College (City University of New York), Columbia University (Lamont–Doherty Earth Observatory), and University of Ankara (Turkey).
- Effectively utilising wind–driven rain as the principal criterion for an innovative methodology of predicting landslides. These forecasts were compared to the actual landslides in Puerto Rico that occurred after Hurricane Maria (2017). Responsible for data analysis and assessment, and quality control.
- This paper was presented at the Annual American Geophysical Union Meeting held in Washington, D.C., December 9–14, 2024.

Student Researcher, Emerging Scholars Program   July, 2023 – August, 2023
New York City College of Technology   *New York, NY*
- Title: Approaches to the Erdős–Straus Conjecture.
- Advisor: Dr. Satyanand Singh.
- Studying the long–standing problem that touches on properties of Egyptian fractions, which had been used in ancient Egyptian mathematics. There exist many partial solutions, mainly in the form of arithmetic progressions and therefore residue classes. This work explores partial solutions and aims to expand them.
- This poster was presented at the 1st Annual Celebrating Research Excellence Symposium at City Tech held at the New York City College of Technology, New York, August 10, 2023.

Student Researcher, Emerging Scholars Program   February, 2023 – May, 2023
New York City College of Technology   *New York, NY*
- Title: Number Theoretic Arithmetic Functions and Dirichlet Series.
- Advisor: Dr. Satyanand Singh.
- Studying number theoretic functions and their associated Dirichlet series. This field lay the foundation for deep research that has applications in cryptography and theoretical studies. This work ventures into the complex plane.
- This poster was presented at the Annual Metro New York Section Meeting of the Mathematical Association of America held at Pace University, New York, April 29, 2023.

Conferences and Presentations

American Geophysical Union   December, 2024
Paper presentation   *Washington, D.C.*
- Innovative Methodology for Real–Time Hurricane Induced Landslides Prediction: A Case Study of Hurricane Maria (2017) in Puerto Rico.

American Geophysical Union   December, 2024
Poster presentation   *Washington, D.C.*
- Surface-based Precipitation Measurement Network in the Bronx: Science and Education Opportunities for Diverse and Minority Students.

Annual Metro New York Section Meeting of the MAA   April, 2024
Poster presentation   *New York, NY*
- On Quotients of a More Generalised Theorem of Wilson.

1st Annual Celebrating Research Excellence Symposium at City Tech   August, 2023
Poster presentation   *New York, NY*
- Approaches to the Erdős–Straus Conjecture.

Annual Metro New York Section Meeting of the MAA   April, 2023
Poster presentation   *New York, NY*
- Number Theoretic Arithmetic Functions and Dirichlet Series.

Experience

Assistant Clarinet Teacher   September, 2024 –
P.S. 183   *New York, NY*
- Helping teach 4th and 5th graders clarinet in a small classroom setting.

IT Student Worker   September, 2023 –
Manhattan School of Music   *New York, NY*
- Resolving technical issues, providing assistance, and responsible for assembly and disassembly of various technical equipment.

Full–Time Student September, 2023 –

Manhattan School of Music *New York, NY*
- Performed as a chamber and symphonic ensemble member in many allowing opportunities, spanning a stylistically and temporally wide range of repertoire.
- Performed in recitals outside of the institution and played in premieres of new compositions.

Part–Time Mathematics and Physics Tutor January, 2023 – March, 2023

Paper *Online*
- Tutored students in mathematics and physics from elementary to high school, helping them overcome difficulties and thrive to meet their academic potential.

Full–Time Student September, 2018 – June, 2022

Fiorello H. LaGuardia High School of Music & Art and Performing Arts *New York, NY*
- Principal chair of the school's senior wind ensemble and senior orchestra.
- Performed as soloist, chamber ensemble member, and symphonic ensemble member in many allowing opportunities, including the Rising Stars show (2020, 2021), ensemble concerts, and recitals.
- Composed several short–scale and long–scale works for clarinet and piano.

Saturday Program Student September, 2016 – May, 2022

The Juilliard School *New York, NY*
- Member of the Juilliard MAP Wind Ensemble, MAP Orchestra (2016 – 2019), Pre–College Symphony, and Pre–College Orchestra (2019 – 2022).
- Performed as soloist, chamber ensemble member, and symphonic ensemble member in many allowing opportunities, including ensemble concerts and recitals.
- Partook in the "Artist as a Citizen" project (2016 – 2019), which in this case involved engaging with school children about the purpose, importance, and beauty of music. Taught them some things about the clarinet, classical music, and most importantly, what it means to be an artist and convey one's message through music.

Programs, Festivals, and Extramural Performances

Downtown Music at Grace 20 November, 2024

Grace Episcopal Church, White Plains, New York

Manhattan Borough Arts Festival 5 June, 2018

Peter Jay Sharp Theater, The Juilliard School

Awards & Honours

Dr. Barnett and Jean Hollander Rich Mathematics Scholarship 2025

The City College of New York

William Feinberg Memorial Music Award 2022

Alumni & Friends of Fiorello H. LaGuardia High School of Music & Art and Performing Arts

Concerto Competition Winner 2020

Fiorello H. LaGuardia High School of Music & Art and Performing Arts

Publications

- Morozov, I. (2023). *"Approaches to the Erdős–Straus Conjecture".* CUNY Academic Works.

- Morozov, I. (2023). *"Number Theoretic Functions and Dirichlet Series".* CUNY Academic Works.

Skills

Academics and Music:

Other Languages: Russian (fluent), French (limited proficiency)
Musical: Proficient clarinet playing, intermediate and self-taught piano playing. Proficient knowledge of music theory and ear training.
Programming Languages: Intermediate knowledge of Python and Arduino languages, and proficient knowledge of LaTeX.
Pedagogy: Excellent reputation of tutoring and teaching children in both classroom and virtual settings.