SAYAK SENGUPTA

https://sites.google.com/binghamton.edu/sayaksengupta ⋄ https://www.linkedin.com/in/sayak-sengupta-a179ab173/

CONTACT INFORMATION, DATE OF BIRTH AND CITIZENSHIP

- E-mail id: sengupta@binghamton.edu, ssengup1@binghamton.edu
- Cellphone number: +919903205867

- DoB: September 7, 1991
- Citizenship and gender: Indian, male.

POSITIONS HELD

- Assistant Professor-I, Adamas University — September 2025 - present
- Assistant Professor-I, The Assam Royal Global University — April 2025 - August 2025
- Research Associate, Binghamton University - SUNY — May 2024 - April 2025
- Adjunct Lecturer, Binghamton University - SUNY — August 2022 - May 2024
- Graduate Teaching Assistant, Binghamton University - SUNY — August 2016 - May 2022

EDUCATION

- Research Associate, Binghamton University - SUNY
  Mentor: Alexander Borisov — May 2024 - present
- Doctor of Philosophy in Mathematics, Binghamton University - SUNY
  Advisor: Alexander Borisov
  Date of submission of Ph.D. Dissertation: March 25, 2024
  Date of defense: April 09, 2024
  Degree conferral date: May 12, 2024
  GPA: 3.88 — 2016 - 2024
- Master of Science in Mathematics, University Of Calcutta
  Percentage: 67.1 — 2013 - 2015
- Bachelor Of Science in Mathematics, Asutosh College, University Of Calcutta
  Percentage: 60.83 — 2010 - 2013
- Higher Secondary education in Arts, Jodhpur Park Boys School
  Percentage: 86 — 2008-2010
- Secondary education, A. K. Ghosh Memorial School
  Percentage: 80 — 2006-2008

TEACHING EXPERIENCE

- Mathematics in Action (Math 130), Binghamton University (Fall 2016, Spring 2017)
- Differential and Integral Calculus (Math 224 and 225), Binghamton University (Fall 2017, Fall 2019, Fall 2020, Fall 2023)
- Elementary Statistics (Math 147), Binghamton University (Spring 2018, Summer 2018)
- Integration Techniques & Applications and Infinite Series (Math 226 and 227), Binghamton University (Fall 2018, Spring 2019, Spring 2020, Summer 2020, Winter 2021, Summer 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023)
- Calculus III (Math 323), Binghamton University (Spring 2021, Spring 2024)
- Multivariate Calculus, The Assam Royal Global University (Spring 2025)

- Number Theory and Graph Theory, The Assam Royal Global University (Fall 2025)
- Engineering Mathematics I, Adamas University (Fall 2025)
- Scientific Computation (Minor), Adamas University (Fall 2025)
- Numerical Methods, Adamas University (Fall 2025)
- Discrete Mathematics, Adamas University (Spring 2026)
- Engineering Mathematics II, Adamas University (Spring 2026)
- Mathematics II, Adamas University (Spring 2026)
- Discrete Structures and Logic, Adamas University (Spring 2026)
- Modern Algebra, Adamas University (Spring 2026)

RESEARCH INTERESTS

Number theory and related areas

PUBLICATIONS AND PREPRINTS

- Locally nilpotent polynomials over $\mathbb{Z}$ (published in INTEGERS, available here)
- Nilpotent polynomials over $\mathbb{Z}$ (accepted at The Fibonacci Quarterly, ArXiv link here)
- Iteration of polynomials over integers (PhD Dissertation published by ProQuest, available here)
- Images of polynomial maps in the Kirch Topology (with Prof. Alexander Borisov) (in preparation)
- Weak uniform convergence of double sequences over local fields (with Dr. Renubebeta Kshetrimayum Devi and Dr. Pranab Dowari) (in preparation)
- Locally nilpotent polynomials over $\mathcal{O}_K$ (in preparation)
- Nilpotent polynomials over $\mathcal{O}_K$ (in preparation)

MY REFERENCES

- Alexander Borisov, Associate Professor (PhD Thesis advisor and PostDoc mentor), Binghamton University-SUNY, email: aborisov@binghamton.edu
- Rahul Kumar, Assistant Professor I, IIT Roorkee, email: rahul.kumar@ma.iitr.ac.in
- Tathagata Mandal, Assistant Professor I, Adamas University, email: tathagata.mandal1@adamasuniversity.ac.in
- Thomas Tucker, Professor, University of Rochester, email: thomas.tucker@rochester.edu
- William Kazmierczak, Director of Calculus, Binghamton University-SUNY, email: lkazmier@binghamton.edu
- B. Sury, Professor, Stat-Math Unit, Indian Statistical Institute, Bangalore, email: sury@isibang.ac.in
- Melvyn Nathanson, Professor, Graduate Center, CUNY, email: melvyn.nathanson@lehman.cuny.edu

LANGUAGE

- English (working proficiency)
- Bengali (native language proficiency)
- Hindi (limited working proficiency)

SOFTWARE EXPERIENCE

I have a fair amount of experience using LaTex. I have limited experience in Python, SageMath and Pari/GP.

CONFERENCES ATTENDED

- Recent trends in number theory, organized by IISER Pune (2026)
- Faculty Development Program organized and held virtually by SRM-AP (2024)
- Combinatorial and Arithmetic Number Theory Conference organized by Prof. Melvyn Nathanson (2024)
- Combinatorial and Arithmetic Number Theory Conference organized by Prof. Melvyn Nathanson (2023)
- Binghamton University Graduate Combinatorics, Algebra and Topology Conference organized by Binghamton University (2022)
- Ottowa Mathematics Conference (2022)
- Upstate Number Theory Conference (2019)
- Indian Science Congress (2013)

SUMMER/WINTER SCHOOL ATTENDED

- Arizona Winter School on *Unlikely intersections* (2023).

TALKS

1. - Title - *Iteration of polynomials over integers*
   - Place - Presidency University, 73rd lecture of Q.E.D Series
   - Date - 03/28/2024
2. - Title - *Iteration of polynomials over integers (**Dissertation Defense**)*
   - Place - Arithmetic Seminar Binghamton University - SUNY
   - Date - 04/09/2024
3. - Title - *Nilpotent and infinitely nilpotent integer sequences*
   - Place - New York Number Theory Seminar
   - Date - 02/22/2024
4. - Title - *Nilpotent and infinitely nilpotent integer sequences*
   - Place - Arithmetic Seminar Binghamton University - SUNY
   - Date - 02/20/2024
5. - Title - *Modular forms and discrete matrix group actions*
   - Place - Arithmetic Seminar Binghamton University - SUNY
   - Date - 10/10/2023
6. - Title - *Action of SL_2*
   - Place - Arithmetic Seminar Binghamton University - SUNY
   - Date - 10/03/2023
7. - Title - *Locally nilpotent polynomials over $\mathbb{Z}$*
   - Place - Combinatorial and Additive Number Theory Conference
   - Date - 05/25/2023
8. - Title - *Locally nilpotent polynomials over $\mathbb{Z}$*
   - Place - New York Number Theory Seminar

- Date - 05/04/2023

9. - Title - *Elliptic curves and heights in elliptic curves*
   - Place - Arithmetic Seminar Binghamton University - SUNY
   - Date - 03/28/2023
10. - Title - *Heights in diophantine geometry*
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 02/21/2023
11. - Title - *Locally nilpotent polynomials*
    - Place - Binghamton University Graduate Combinatorics, Algebra and Topology Conference
    - Date - 11/05/2022
12. - Title - *Locally nilpotent polynomials over* $\mathbb{Z}$ (III)
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 11/01/2022
13. - Title - *Nilpotent and nilpotent modulo polynomials over* $\mathbb{Z}$ (II)
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 02/22/2022
14. - Title - *Nilpotent and nilpotent modulo polynomials over* $\mathbb{Z}$ (I)
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 02/15/2022
15. - Title - *Polynomial maps*
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 09/22/2020
16. - Title - *Jacobian conjecture in positive characteristic*
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 12/04/2018
17. - Title - *Dimension theory* (II)
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 03/26/2017
18. - Title - *Dimension theory* (I)
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 02/26/2017
19. - Title - *Valuations*
    - Place - Arithmetic Seminar Binghamton University - SUNY
    - Date - 11/27/2017
20. - Title - *Dual spaces*
    - Place - Arithmetic Seminar Binghamton University - SUNY

- Date - 12/05/2016

VOLUNTEER WORK

I am a member of Math Aspirants Group (established by Dr. Vinod Kumar P in 2017) formed in the spirit of helping students in India to prepare for the competitive exams such as GATE, IIT JAM, NET, et cetera. Following are the sessions handled by me.

1. Title: Basics of Linear Algebra, YouTube link
2. Title: Linear Transformations, YouTube link

OTHER INTERESTS

I am trained in Indian classical music. I am also an avid reader of story books.