Jnanajyoti Bhaumik

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® *Google Scholar*
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Research Interests

Network Science, Evolutionary dynamics on networks, Mathematical biology, Machine learning.

Education

2021- Present   **PhD Applied Mathematics**, *State University of New York at Buffalo*, New York, GPA-3.98/4
Advisor: Naoki Masuda, Anticipated graduation date: May 2025

2017–2020   **MS Mathematics**, *Indian Institute of Science Education and Research Mohali*, Mohali,Punjab
CPI - 7.8/10

2014–2017   **B.Sc Mathematics (Honours)**, *Ramjas College, University of Delhi*
Percentage - 96.3/100

Work Experience

Sep 2024 - Present   **Data Science Consultant**, *Roc360*, New York, Worked on data science projects with the Roc360 data science team.

May 2024- Aug 2024   **Research Assistant**, *State University of New York at Buffalo*, New York, Worked as an RA for Prof. Naoki Masuda in the area of evolutionary dynamics on networks.

May 2023- Aug 2023   **Data Science Intern**, *Edison Welding Institute, Buffalo*, New York, Worked on Bayesian calibration of computer models at Edison Welding Institute, Buffalo.

Jan 2021- Present   **Teaching Assistant**, *State University of New York at Buffalo*, New York, Worked as a teaching assistant at the Dept. of Mathematics.

Publications

Aug 2024   **Constant-selection evolutionary dynamics on weighted networks**, with Naoki Masuda
Proceedings of the Royal Society A (In press). `https://royalsocietypublishing.org/doi/full/10.1098/rspa.2024.0223`

Aug 2023	**Fixation probability in evolutionary dynamics on switching temporal networks**, with Naoki Masuda
	Journal of Mathematical Biology `https://link.springer.com/journal/285/volumes-and-issues/87-5`

Projects

May 2023- Aug 2023	**Bayesian Calibration of the Rosenthal Model**, *Edison Welding Institute*
Aug 2019- May 2020	**Masters' Thesis titled 'On knots and the Alexander Polynomial'**, *under the guidance of Dr Shane D'Mello*
May-July 2019	**Singular Homology and Cohomology**, IISER Mohali, under Dr Shane D'Mello
	Excision theorem and some basic cohomology
Jan-April 2019	**Semester Project**, *Topics in knot theory*, under Dr Shane D'Mello, Studied Alexander, Schoenflies' theorem, isotopies in codimension one and two, mapping class groups of torus
May-July 2018	**Galois Cohomology and Hasse Principle**, IISER Mohali, under Dr Amit Kulshretha
May-July 2017	**Discrete Fourier Transform and Spectral Statistics of Graphs**, *IAS-NASI-INSA Summer Fellow*, BARC, Mumbai under Dr Sudhir Jain
May-July 2016	**Construction of real numbers and Sharkovskii's theorem**, *IAS-NASI-INSA Summer Fellow*, IISER Tvm, under Dr Shrihari Sridharan Studied Construction of Real numbers by Dedekind Cuts and Weierstrass' method. Studied the Sharkovskii's theorem for obits.

Scholarships, Fellowships and Awards

Aug 2024	**AMS Conference Travel Grant**, *AMS Eastern Sectional Fall Meeting, Albany*
Aug 2024	**SIAM Conference Travel Grant**, *SIAM Mathematics of Data Sciences*
Aug 2024	**Doctoral Dissertation Fellowship**, *Department of Mathematics*, UB
Jun 2024	**SIAM Conference Travel Grant**, *SIAM Life Sciences*
May-Aug 2024	**Research Assistantship**, UB
	Worked as an RA for Prof Naoki Masuda.
Jan 2021-	**Teaching Assistantship**, *Department of Mathematics*, UB
Oct 2023	**Conference Grant**, *SIAM NNP*, NJIT, NJ
July 2023	**Landahl Travel Award**, *Society of Mathematical Biology*, SMB Annual Meet 2023
Sept 2022	**Conference Grant**, *Graduate Students' Association*, UB

2017-20	**Recipient of IISER Institute Fellowship** Awarded to Integrated PhD students of IISER Mohali.
2019	**IISER Summer Fellowship**, *IISER*, Mohali
2018	**IISER Summer Fellowship**, *IISER*, Mohali
2017	**Summer Research Fellowship**, *Indian Academy of Sciences* , Bhabha Atomic Research Center, Mumbai
April 2017	**Ramjas College Best Student Award**, *2016-17* Awarded in recognition of academic and extracurricular activities.
2014-17	**Secured highest marks in B.Sc(H) Mathematics**, *Ramjas College*
2016	**Summer Research Fellowship**, *Indian Academy of Sciences* , IISER, Thiruvananthapuram
2014-17	**Recipient of CSSS Scholarship**, *CBSE*

Conferences, Posters and Workshops

May 2025	**SIAM Application of Dynamical Systems**, *Denver*, CO Co-organizing a minisymposium on evolutionary dynamics in biological, ecological and social systems.
Nov 2024	**Illinois Mathematical Biology Seminar**, *Urbana*, IL Invited presentation.
Oct 2024	**SIAM MDS**, *Atlanta*, GA Contributed Poster.
Oct 2024	**AMS Albany Sectional**, *Atlanta*, GA Contributed Talk.
Jun 2024	**SIAM LS**, *Portland*, OR Invited to minisymposium talk.
Oct 2023	**SIAM NNP**, *Newark*, NJ Oral Presentation.
Oct 2023	**AI in Health Conference**, *Houston*, Texas Poster titled 'Bayesian calibration of the Rosenthal model'.
July 2023	**SMB Annual Meet 2023**, *Columbus*, Ohio Poster presentation.
May 2023	**SIAM Dynamical Systems 2023**, *Portland*, Oregon
March 2023	**NERCCS 2023**, *Potsdam*, New York Oral presentation.
Nov 2022	**Complex Networks 2022**, *Palermo*, Italy Oral presentation titled 'Fixation probability of switching networks'.
Sept 2022	**SIAM: Mathematics of Data Science**, *San Diego* Participated virtually.

Sept 2022	**SIAM: Network Science Conference**, *Virtual*
July 2022	**MSRI Summer School: Random Graphs**, *MSRI*, Berkeley
May 2021	**Data Science Boot Camp**, *Erdős Institute*
	https://www.erdosinstitute.org/may2021certificates/ jnanajyoti-bhaumik
Aug 2020	**Knots Through Web**, *ICTS-TIFR*, Bangalore, Online conference
Dec 2019	**Conference on Geometric Topology**, *IISER Pune*, Pune
July 2018	**Inter IISER-NISER Math Meet**, *IISER Bhopal*, Bhopal
2015-16	**Certificate Course in German Language**, *Hansraj College*

Test Scores

June 2018	**All India Rank 103 in CSIR-NET Junior Research Fellowship**
Sept 2019	**GRE General**, *322/340*, Verbal-155, Quant-167
Sept 2019	**TOEFL iBT**, *109/120*

Organizational Experience

2023-Present	**Member of Society of Mathematical Biology**
2021-Present	**Member of Society of Industrial and Applied Math**
	Served as the treasurer of SIAM, UB Chapter between July 2022-Feb 2023.
2020-Present	**Member of American Mathematical Society**
2021-2023	**Directed Reading Project**, *Dept. of Mathematics, State University of New York at Buffalo.*
	Served as the project coordinator.
April 2017	**Volunteer**, *International Conference on Mathematics and Applications*, Ramjas College

Technical Skills

Languages & Platforms, *Python, LaTeX, C, JAVA, MySQL, Wolfram Mathematica*

Python Libraries, *NumPy, Pandas, Matplotlib, Scikit Learns, Tensor flow, PyTorch, NetworkX.*

ML Algorithms and techniques, *Explanatory and predictive modeling, linear and nonlinear regressions, decision trees, dimensionality reduction, data cleaning, Linear and Polynomial Regression, PCA, SVM, K-Nearest Neighbors, Random forests, k-Means clustering, Gaussian processes, A/B testing.*

Languages

Bengali (Native), English, Hindi, German (A1)