Nilava Metya

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Education

Rutgers, the State University of New Jersey - New Brunswick **Sep '22 – (expected) '27**
Doctor of Philosophy in Mathematics | ***CGPA:*** 4.0/4.0
Master of Science in Mathematics | ***CGPA:*** 4.0/4.0 | ***2022 - '24*** *Piscataway, New Jersey, USA*
(passed written qualifying exams in first attempt just before program started)

Chennai Mathematical Institute **Aug '19 – May '22**
Bachelor of Science (Honours) in Mathematics and Computer Science | ***CGPA:*** 9.72/10
Position: ***Third*** *(out of* 55 *students)* *Chennai, Tamil Nadu, India*
(completed degree requirements in 2.5 *years)*

Don Bosco School, Liluah **Apr '06 – Mar '19**
Indian School Certificate (ISC) *2019* | ***Percentage:*** 97.25%
Position: ***First*** *in science stream (∼* 55 *students),* ***second*** *overall (∼* 180 *students)* *Howrah, West Bengal, India*
Indian Certificate of Secondary Education (ICSE) *2017* | ***Percentage:*** 96.6%
Position: ***First*** *in school (∼* 180 *students)*

Relevant Coursework

- Matrix Computations
- Differential Equations
- Haskell, Python
- Object Oriented Programming
- Algorithm Design + Analysis
- Discrete Mathematics
- Automata Theory
- Lambda Calculus
- Newtonian, Lagrangian, Hamiltonian mechanics
- Relativity, Dynamical Systems
- Sheaves and Schemes^{Princeton}
- Probability^{Rutgers}
- Convex Optimization^{Princeton}
- Learning Theory^{Rutgers}

Publications/Preprints

1. G DePaul, S Hoşten, **N Metya**, I Nometa. Degrees of the Wasserstein distance to small toric models. *Journal of Algebraic Statistics*

Relevant Talks Delivered

Principal Components along Quiver representations | 1 *talk* | Rutgers course: *Computational Topology* **Dec '23**
Inference on growth process of a network | 1 *talk* | Rutgers course: *Data Mining* **Dec '23**
Complexity of Optimization | 1 *talk* | Rutgers *Pizza Seminar* **Oct '23**
Complexity of Computing Wasserstein Distance | 1 *talk* | *Apprenticeship Week* at IMSI, Chicago **Oct '23**
Kneser graph coloring | 1 *talk* | Rutgers *Graduate Combinatorics Seminar* **Oct '22**
Fiedler vector method | 1 *talk* | CMI course: *Matrix Computations* **May '22**
Markov Chain Monte Carlo | 1 *talk* | Internship with *Prof Ramamoorthi* **Sep '21**

Attendance in conferences/workshops

Princeton Machine Learning Theory Summer School | *Summer School* | Princeton **Aug '24**
Efficient Algorithms for High Dimensional Metrics | *Workshop* | DIMACS, Rutgers, New Brunswick **May '24**
Bayesian Statistics and Statistical Learning | *Workshop* | IMSI, Chicago **Dec '23**
Algebraic Statistics for Ecological and Biological Systems | *Workshop* | IMSI, Chicago **Oct '23**
Apprenticeship Week: Varieties from Statistics | IMSI, Chicago **Oct '23**
Invitation to Algebraic Statistics and Applications | IMSI, Chicago **Sep '23**
Permutation and Causal Inference: Connections and Applications | IMSI, Chicago **Aug '23**

Algebraic Methods in Biochemical Reaction Networks | MPI, Leipzig **Jun '23**

Honours and Awards

Nominated by Rutgers Math department for SLMath summer school **Jun '23**
Summer school at Leipzig - awarded full travel funding. Only two students from Rutgers Math were fully funded by SLMath.

Academic Excellence Award at Rutgers **Sep '22**
Received a certificate and $100 based on performance in Written Qualifying Exams.

Shriram Scholarship at CMI **'19 – '22**
Received institutional fee waiver and monthly stipend (based on entrance exam).

Ranked 4^{th} nationally at the *Bachelor of Statistics* (B.Stat.) entrance examination **'19**
Indian Statistical Institute (ISI)

Informatics Olympiad **'17, '18, '19**
*Selected among (approx) top 100-130 school students in India in **Zonal Informatics Olympiad** (ZIO).*

Mathematical Olympiad **Jan '18**
*Selected for **Indian National Mathematical Olympiad** (INMO) **Training Camp** | top 30 school students in West Bengal.*

Program in Mathematics for Young Scientists (PROMYS) **'18, '19, '20, '21**
*Awarded the **Tara and Jasubhai Mehta Fellowship** to PROMYS (among 5 Indian school students in 2018) based on a competitive process. Participated twice as a student ('18, '19) and twice as a counselor ('20, '21).*

Others

- Qualified for **International Collegiate Programming Contest** (ICPC) Kharagpur regionals and Amritapuri regionals in 2019 and secured rank 35 among (approx) 90 university teams at Kharagpur.
- Selected among top 30 students in India to participate in **Scholastic Test of Excellence in Mathematical Sciences** (STEMS) camp at CMI in 2018, based on a competitive exam (across grades $9-12$ and across Math, Physics, Computer Science).
- Secured the **third position** in **Mathematics Talent Reward Programme** (MTRP) 2016, organized by ISI Kolkata, based on a competitive exam and quizzes at a camp.

Selected Teaching/Grading experience

Head Counselor at PROMYS India | IISc Bangalore **May – Jun '23**

Grader | Rutgers University **Sep '22 – May '24**

Teaching Assistant | Chennai Mathematical Institute **Dec '20 – May '22**

Faculty at Ramanujan School of Mathematics | Kolkata **May '19 – July '22**
Taught high-school students competitive math for math olympiad, CMI, ISI entrance exams

Skills

Research	Optimization and AI/ML in game theory, especially distributionally robust optimization
Soft-skills	Active team-worker, collaborative problem solver, looks forward to tricky puzzles
Languages	Bengali (mother tongue), English (fluent), Hindi (fluent)
Programming	Python, C++, R, Haskell, MATLAB, JAVA, HTML, SageMath, Macaulay2
Documentation	LaTeX, Microsoft Word