

CV

Satyaki Mukherjee

July 28, 2024

30 Orange Grove, RELC International, Room - 1701

Singapore, Singapore - 258352

Date of birth: 18-06-1992

Birth city: Durgapur, West Bengal, India

Highest Degree: Ph.D. in Mathematics

Surname: Mukherjee

Given name: Satyaki

email: satyaki.mukhyo@gmail.com

Nationality: Indian

family status : Unmarried

1 Current Affiliation

Postdoctorate @ National University of Singapore

Mentor: [Subhroshekhar Ghosh](#)

2 Past Affiliations

2.1 Employment

[Postdoctorate @ Theoretical Foundations of AI group at Technical University of Munich](#) January

2022 - December 2023

Mentor: [Debarghya Ghoshdastidar](#)

2.2 Education

[University of California, Berkeley](#)

Ph.D., [Department of Mathematics](#)

Aug 2015 - May 2021

Advisor: [Professor Nikhil Srivastava](#)

Thesis : [Pseudospectra of matrices and Pointspectra of infinite operators](#)

GPA : 3.8/4

[Indian Statistical Institute, Bangalore, India](#)

Master of Mathematics (Gold Medalist)

July 2014 - May 2015

Total Percentage: 87%

Bachelor of Mathematics

July 2011 - May 2013

Total percentage score: 90%

Key Courses: Sampling methods, Stochastic processes, Bayesian statistics, Measure theoretic probability, Data Structures and Algorithms, Real and Complex analysis, Linear Algebra, Abstract Algebra, Commutative Algebra,

Programming Languages Known: Python, Octave, C++.

3 List of Publications

(* starred contributors are in alphabetical-order)

3.1 Fully published

1. **Representation Learning Dynamics of Self-Supervised Models** Pascal Mattia Esser*, **Satyaki Mukherjee***, Debarghya Ghoshdastidar* [TMLR 2024](#) [Arxiv 2023](#)
2. **Improved Representation Learning Through Tensorized Autoencoders** Pascal Mattia Esser*, **Satyaki Mukherjee***, Mahalakshmi Sabanayagam*, Debarghya Ghoshdastidar [AISTATS 2023](#) [Arxiv 2022](#).
3. **Point Spectrum of Periodic Operators on Universal Covering Trees** Jess Banks*, Jorge Garza-Vargas* **Satyaki Mukherjee*** [IMRN 2021](#) [Arxiv 2020](#).
4. **Gaussian Regularization of the Pseudospectrum and Davies' Conjecture** Jess Banks*, Archit Kulkarni*, **Satyaki Mukherjee***, Nikhil Srivastava*. [CPAM 2021](#) [Arxiv 2019](#).

5. **One-round discrete Voronoi game in \mathbb{R}^2 in presence of existing facilities.** Aritra Banik*, Bhaswar B. Bhattacharya*, Sandip Das* and **Satyaki Mukherjee*** In CCCG 2013, pages 37-42; [CCCG 2013](#)
6. **A note on the transversal size of a series of families constructed over Cycle Graph.** Kaushik Majumder*, **Satyaki Mukherjee*** [JCTA 2018](#) [ArXiv 2015](#)

3.2 In preprint / under consideration

1. **Wasserstein Projection Pursuit of Non-Gaussian Signals** **Satyaki Mukherjee***, Soumendu Sundar Mukherjee*, Debarghya Ghoshdastidar [Arxiv 2023](#).
2. **On a generalisation of the coupon collector problem** Siva Athreya*, **Satyaki Mukherjee***, Soumendu Sundar Mukherjee* [Arxiv 2023](#).
3. **On Concentration Inequalities for Random Matrix Products** Tarun Kathuria*, **Satyaki Mukherjee***, Nikhil Srivastava*. [Arxiv 2020](#)
4. **A special case of the existential version of the NCK inequality** **Satyaki Mukherjee***. [Arxiv 2019](#)

4 Academic Achievements and Awards

- Represented the Indian team and received Bronze medal at [51st International Mathematics Olympiad, Kazakhstan, 2010](#).
- Passed first round for the Informatics Olympiad selection procedure (organized by [IARCS](#)).
- Passed first round for the Physics Olympiad selection procedure (organized by [IAPT](#)).

5 Teaching Experience:

I was Graduate Student Instructor for the following courses.

- Math-54 : Undergraduate Linear Algebra
- Math-110: Upper division Linear Algebra.

I was an instructor at TUM for the following courses

- Praktikum for Analysis of new phenomena and reproducibility in AI/ML
- Seminar for theoretical advances in AI/ML

6 Extra Curricular Activities:

- Was the student president in my undergraduate institution.
- Organized treasure hunts during my undergraduate studies.
- Was an organizer in the Mathematics Graduate Student Organisation, Berkeley.