

Research Areas and Interests

- 📖 Quantum algorithms and statistical learning theory; with an emphasis on learning w.r.t. various noise models, and proving theoretical bounds for convergence, generalization error, and speedups.

Education

- 2019 – PRESENT 📖 **Ph.D.** in Computer Science and Engineering.
Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi).
Advisor: Prof. Debajyoti Bera.
Thesis title: *Designing Quantum Learning Algorithms for Classical Objects*. (Submitted)
- 2013 – 2017 📖 **B.Tech.** in Computer Science and Engineering.
Maulana Abul Kalam Azad University of Technology, West Bengal (MAKAUT).
GPA: 8.10/10.

Research Visits

- AUG 24– OCT 24 📖 **ACMU, Indian Statistical Institute**, Kolkata.
Host: Prof. Sourav Chakraborty.
- JUL 23– SEP 23 📖 **Czech Technical University**, Prague.
Host: Prof. Jakub Marecek, Prof. Vyacheslav Kungurtsev.

Research Publications

Journal Articles

- 1 **S. Chatterjee**, R. Bhatia, P. S. Chani, and D. Bera, “Quantum boosting using domain-partitioning hypotheses,” *Quantum Mach. Intell.*, vol. 5, no. 2, pp. 1–20, 2023. 🔗 DOI: 10.1007/S42484-023-00122-3.

Conference Proceedings

- 1 **S. Chatterjee**, M. Mukherjee, and A. Sethi, “Generalization bounds for dependent data using online-to-batch conversion,” in *Proceedings of the 28th International Conference on Artificial Intelligence and Statistics (AISTATS)*, accepted, 2025.
- 2 **S. Chatterjee**, T. SAPV, and D. Bera, “Efficient quantum agnostic improper learning of decision trees,” in *Proceedings of the 27th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2024.
🔗 URL: <https://proceedings.mlr.press/v238/chatterjee24a.html>.

Manuscripts and Short Papers

- 1 **S. Chatterjee** and D. Bera, *Applying the quantum alternating operator ansatz to the graph matching problem*, Extended Abstract at the The 20th Asian Quantum Information Science (AQIS) Conference, 2020. arXiv: 2011.11918. 🔗 URL: <https://arxiv.org/abs/2011.11918>.

Invited and Contributed Talks

Jan 2025	■ QAC 2025 symposium, C-DAC and DIAT Pune. <i>Modern Algorithmic Primitives in Quantum Computing.</i>
Oct 2024	■ ACMU seminar, ISI Kolkata. <i>Generalization bounds for dependent data using online-to-batch conversion.</i>
July 2024	■ Recent Trends in Algorithms Workshop 2024. <i>Efficient quantum agnostic improper learning of decision trees.</i>
June 2024	■ ACMU seminar, ISI Kolkata. <i>Efficient quantum agnostic improper learning of decision trees.</i>
February 2024	■ Quantum Computing Semester, Chennai Mathematical Institute. <i>Quantum Algorithms for Linear Algebra.</i> <i>Block Encodings and Linear Combination of Unitaries.</i>
September 2023	■ University of Latvia. <i>Efficient quantum agnostic improper learning of decision trees.</i> ■ IDA Seminar, Czech Technical University. <i>Efficient quantum agnostic improper learning of decision trees.</i>
November 2022	■ The 6th Quantum Techniques in Machine Learning (QTML 2023) conference. <i>Quantum boosting using domain-partitioning hypotheses.</i>
March 2022	■ Theory Seminar, Indian Institute of Information Technology Delhi. <i>Quantum boosting using domain-partitioning hypotheses.</i>
December 2020	■ Faculty Development Programme, JNTU Anantapur. <i>Quantum Machine Learning.</i>

Teaching

Instructor

Advanced Quantum Algorithms	■ Took 3 lectures at the Quantum Computing Semester, Chennai Mathematical Institute . Topics included Quantum algorithms for linear algebra, Block Encodings. [FEBRUARY 2024]
Systems Refresher Module	■ Took 3 lectures for undergraduate and master's students at IIIT-Delhi. Topics included C programming and Operating systems. [AUGUST 2022]

Teaching Assistantship

Theory of Computation	■ Winter 2020, Winter 2021, Winter 2024.
Modern Algorithm Design	■ Monsoon 2020, Monsoon 2021.
Introduction to Quantum Computing	■ Winter 2023.
Data Structures and Algorithms	■ Summer 2022.



Miscellaneous

Awards and Achievements


AUG 24	■ IIITD Dean's List for Best Teaching Assistant (Theory of Computation).
FEB 20	■ Runners Up, IBMQ Awards - Teach Me Quantum 2019.

Miscellaneous (continued)





Reviewing

- Conference¹  NeurIPS'24, ICLR'25*, AISTATS'25*, ICML'25*.
- Journal  Scientific Reports (2024), Quantum (2024).

Mentoring

- JAN 24 – PRESENT  Neeshu Rathi,
Ph.D. student at IIT- Roorkee.




Organisation

- Workshops  Co-organised the QISE workshop at FSTTCS 2021.
- Seminars  Talks on Quantum Computing at IIIT-D.
-  Ketchup talks at IIIT-D.
-  Theory Reading Group talks at IIIT-D.

Research and Travel Grants

- APR 24  AISTATS 2024 Registration Grant.

Industry Experience

- SEP 17 – MAR 19  **Staff Consultant**, Oracle Financial Services Software Limited.
- FEB 17 – APR 17  **Systems Engineering Intern**, Infosys Limited.
- JUN 16 – JUL 16  **Data-Science Intern**, AlCircle Pte Ltd.

References

Available on Request

¹* indicates invited reviewer.