

Sagnik Chatterjee

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Education

- Jul 2019 – Jun 2025  **Ph.D.** in Computer Science and Engineering.
Advisor: Prof. Debajyoti Bera.
Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi).
- Aug 2013 – Aug 2017  **B.Tech.** in Computer Science and Engineering.
Maulana Abul Kalam Azad University of Technology, West Bengal (MAKAUT). **GPA:** 8.10/10.

Employment

- DEC 2025 – Present  **Visiting Fellow (Postdoctoral Researcher)** at STCS, TIFR Mumbai.
Host: Prof. Jatin Batra.
- SEP 2017 – MAR 2019  **Staff Consultant**, Oracle Financial Services Software Limited, Bangalore.

Research

Ph.D. Thesis

- 1 **S. Chatterjee**, "Designing quantum learning algorithms for classical objects," Available at <https://repository.iiitd.edu.in/xmlui/handle/123456789/1758>, PhD thesis, IIIT-Delhi, May 2025.

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)*, 2025.  URL: <https://proceedings.mlr.press/v258/chatterjee25b.html>.
- 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>.

[†] denotes equal contribution.

Journal Articles

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

Under Review

- 1 **S. Chatterjee**, "The Quantum Learning Menagerie (A survey on Quantum learning for Classical concepts)," 2026. arXiv: 2602.01054.  URL: <https://arxiv.org/abs/2602.01054>.
- 2 S. Das[†], **S. Chatterjee**[†], and J. Batra, "Robust learning of SIMs," 2026.
- 3 M. Mukherjee, **S. Chatterjee**, and A. Sethi, "Perfect secret key generation for a class of hypergraphical sources," 2026. arXiv: 2601.10697.  URL: <https://arxiv.org/abs/2601.10697>.
- 4 Y. Saxena, T. Sapv, **S. Chatterjee**, and R. K. Lee, "Generalized cross-resonance scheme for maximally-entangling two-qutrit gates," 2026. arXiv: 2504.15265.  URL: <https://arxiv.org/abs/2504.15265>.

[†] denotes equal contribution.

Workshop Papers and Posters

- 1 **S. Chatterjee** and V. Kungurtsev, *Quantum solutions to the privacy vs. utility tradeoff*, 2023. arXiv: 2307.03118.

- 2 **S. Chatterjee**, R. Bhatia, P. S. Chani, and D. Bera, *Quantum boosting using domain-partitioning hypotheses*, Short Talk at the 6th Quantum Techniques in Machine Learning (QTML 2023). Poster presented at the 25th International conference on Quantum Information Processing (QIP 2022),, 2022. arXiv: 2110.12793.
- 3 **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.

Teaching

Instructor (Short Courses)

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| Feb 2024 |  Designed and taught 3 lectures at the Chennai Mathematical Institute .
Topic 1: The Harrow-Hassidim-Lloyd Algorithm and its extensions.
Topic 2: Block Encoding and Linear Combination of Unitaries. |
| Aug 2022 |  Designed and taught 3 lectures for a refresher module at IIIT-Delhi .
Topic: C programming for Operating Systems. |

Teaching Assistantship (IIITD)

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| Theory of Computation |  Winter 2020, Winter 2021, Winter 2024. [Head TA] |
| Data Structures |  Summer 2022. [Head TA] |
| Intro to Quantum Computing |  Winter 2023. [Sole TA] |
| Modern Algorithm Design |  Monsoon 2020, Monsoon 2021. [Sole TA] |

My duties included designing and conducting tutorials, creating assignments, and holding office hours and remedial sessions for all the above courses.

Research Visits and Internships

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| AUG 2024– SEP 2024 |  ACMU, Indian Statistical Institute , Kolkata.
Host: Prof. Sourav Chakraborty. |
| JUL 2023– AUG 2023 |  Czech Technical University , Prague.
Host: Prof. Jakub Marecek, Prof. Vyacheslav Kungurtsev. |
| FEB 2017 – APR 2017 |  Systems Engineering Intern , Infosys Limited. |
| JUN 2016– JUL 2016 |  Data-Science Intern , AlCircle Pte Ltd. |

Invited Talks

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| Oct 2025 |  STCS seminar, TIFR Mumbai.
<i>Generalization bounds for dependent data using online-to-batch conversion.</i> |
| May 2025 |  CS Colloquium, Ashoka University.
<i>Efficient quantum agnostic improper learning of decision trees.</i> |
| Mar 2025 |  Quantum Computing Workshop by Edunautic, IIT Delhi.
<i>Full day workshop from fundamentals to hands-on instruction.</i> |
| Jan 2025 |  Young Scientists Session at 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> |

Invited Talks (continued)

- February 2024 Quantum Computing Semester, Chennai Mathematical Institute.
Quantum Algorithms for Linear Algebra.
Block Encodings and Linear Combination of Unitaries.
- September 2023 Center for Quantum Computing Science, University of Latvia.
Efficient quantum agnostic improper learning of decision trees.
- IDA Seminar, Czech Technical University.
Efficient quantum agnostic improper learning of decision trees.
Quantum boosting using domain-partitioning hypotheses.
- March 2022 Theory Seminar, Indian Institute of Information Technology Delhi.
Quantum boosting using domain-partitioning hypotheses.
- December 2020 Faculty Development Programme, JNTU Anantapur.
Quantum Machine Learning.

Miscellaneous

Awards and Achievements

- AUG 2024 IIITD Dean's List for Best Teaching Assistant (Theory of Computation).
- APR 2024 AISTATS 2024 Registration Grant.
- JAN 2022 QIP 2022 Student Travel Award (Not availed due to COVID restrictions).
- FEB 2020 **Runners Up, IBMQ Awards** - Teach Me Quantum 2019.
- OCT 2019 Full Scholarship to attend the 4th Winter School in CSE organized by the IIAS, HUJI, Jerusalem.

Reviewing

- Conference STACS ('25); ICML ('25,'26); NeurIPS ('24, '25); ICLR ('25,'26); AISTATS ('25,'26).
- Journal Scientific Reports ('24); Quantum ('24, '25).

Mentoring

- JAN 2024 – MAY 2025 Alhad Sethi. B.Tech student at IIIT-Delhi.
- JAN 2021 – JUL 2023 Parmeet Singh Chani. B.Tech student at DTU, Delhi.
- Rohan Bhatia. B.Tech student at DTU, Delhi.

Workshop

- Workshops Co-organiser and Webadmin for the QISE workshop at FSTTCS 2021.
- Seminars (IIIT-D) Talks on Quantum Computing, Spectral Graph Theory, Theory Reading Group, Ketchup talks.

References

Available on Request