

# Sagnik Chatterjee

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## Biography

I am a Ph.D. student in the [BraQIIIT](#) lab at IIIT-Delhi, where I am very fortunate to be advised by [Prof. Debajyoti Bera](#). My research lies at the intersection of **quantum computing** and **learning theory**, and involves developing algorithms for discriminative and generative tasks under various noise models and privacy constraints.

## Education

JUL '19 - present Ph.D. in Computer Science	Indraprastha Institute of Information Technology, Delhi (IIIT-D) <b>CGPA: 8.78</b>
AUG '13 - AUG '17 B.Tech in Computer Science and Engineering	Maulana Abul Kalam Azad University of Technology, Kolkata <b>CGPA: 8.10</b>

## Research Internships

JUL '23 to SEP '23	<b>IDA research group, Czech Technical University, Prague (CTU)</b> Hosted by Dr. Jakub Marecek and Dr. Vyacheslav Kungurtsev.
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## Peer-reviewed Papers

Journal <a href="#">[DOI]</a> Poster	<b>Quantum Boosting using Domain-Partitioning Hypotheses</b> Quantum Machine Intelligence 5, 33 (2023). 25th Conference on Quantum Information Processing (QIP 2022). <i>Sagnik Chatterjee, Rohan Bhatia, Parmeet Singh Chani, and Debajyoti Bera</i>
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## Informal and Other Publications

Submitted	<b>Quantum Solutions to the Privacy vs. Utility Tradeoff</b> <i>Sagnik Chatterjee, Vyacheslav Kungurtsev</i>
Submitted	<b>Efficient Quantum Agnostic Improper Learning of Decision Trees</b> <i>Sagnik Chatterjee, Tharmashastha SAPV, and Debajyoti Bera</i>
Poster	<b>Applying the Quantum Alternating Operator Ansatz to the Graph Matching Problem</b> Extended Abstract at AQIS'20. Poster at QIP'21. <i>Sagnik Chatterjee, Debajyoti Bera</i>

## Teaching

IIIT-D Winter Semester	2023	Teaching Assistant	Introduction to Quantum Computing
IIIT-D Refresher Module	2022	<b>Instructor</b>	Introduction to C Programming
IIIT-D Summer Semester	2022	Teaching Assistant	Data Structures and Algorithms
IIIT-D Winter Semester	2020, 2021	Teaching Assistant	Theory of Computation
IIIT-D Monsoon Semester	2020, 2021	Teaching Assistant	Modern Algorithm Design

## Invited Talks

Efficient Quantum Agnostic Improper Learning of Decision Trees.	University of Riga IDA seminar, Czech Technical University	SEP'23 SEP'23
Quantum Boosting using Domain-Partitioning Hypotheses.	IIIT-D CSE Seminar <b>QTML 2022</b> (Naples, Italy) IIIT-D Theory Seminar	FEB'23 NOV'22 MAR'22
Hoffman's Chromatic Number Lower Bound.	IIIT-D Spectral Graph Theory Reading Group	JUN'23
Spectral properties of Random Graphs.	IIIT-D Spectral Graph Theory Reading Group	JUN'23

Improved Quantum Query Upper Bounds using Classical Decision Trees.	IIIT-D Theory Reading Group	MAY'23
Applying QAOA+ to the Graph Matching Problem.	QISE 21 Workshop (Online)	DEC'21
Quantum Shallow Circuits.	T-talk at Évariste, IIIT-D Math Club (Online)	OCT'20
Quantum Algorithms for solving Linear Systems of Equations.	IAS 4th CSE Winter School	DEC'19
Quantum Machine Learning.	FDP at JNTU, Anantapur (Online) Delhi Quantum Computing Meetup	DEC'20 FEB'20

## Selected Extra-Curricular Activities

AUG'22- DEC'22	Organizer and coordinator for Ketchup talks, at IIIT Delhi. <a href="https://twitter.com/KetchupIIITD">https://twitter.com/KetchupIIITD</a> .
DEC '21	Only student organizer for the QISE'21 workshop. <a href="https://acm-goat.github.io/QISE/">https://acm-goat.github.io/QISE/</a> .
FEB '20	Student organizer for the Indo-German Spring School on Algorithms for Big Data 2020, at IIIT-Delhi. <a href="https://sites.google.com/view/abd2020/home">https://sites.google.com/view/abd2020/home</a> .
FEB '20	Organized the first India Quantum Computing Meetup in New Delhi. <a href="https://sites.google.com/iiitd.ac.in/indiaqcmeetup/home">https://sites.google.com/iiitd.ac.in/indiaqcmeetup/home</a> .

## Workshops and Schools

IISc Bangalore <i>Online</i> IIIT Delhi ISI Kolkata IAS Jerusalem	JTG/IEEE ITSoc Summer School 2023 Quantum Information Science and Engineering (QISE) 2022 Indo-German Spring School on ALgorithms for Big Data 2020 Workshop on Boolean Functions The 4th Advanced School in Computer Science and Engineering
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## Industry Experience

NOV '18-MAR '19 SEP '17-OCT '18	<b>Oracle Financial Services Software Limited</b> <u>Staff Consultant</u> : Developed data models and automated report generation during EOD operations. <u>Associate Consultant</u> : Customized the business logic of our core product FCUBS.
FEB'17-MAY'17	<b>Infosys Limited</b> <u>Systems Engineering Intern</u> : Full Stack Developer.
SUMMER 2016	<b>AlCircle Pte Ltd</b> <u>Intern</u> : Created a Python application to source content for the editorial team.

## References

Dr. Debajyoti Bera Email: dbera@iiitd.ac.in	Associate Professor, Department of Computer Science, Indraprastha Institute of Information Technology (IIIT) Delhi
Dr. Rohit Vaish Email: rvaish@iiitd.ac.in	Assistant Professor, Department of Computer Science, Indian Institute of Technology (IIT) Delhi
Dr. Vyacheslav Kungurtsev Email: kunguvya@fel.cvut.cz	Researcher, Faculty of Computer Science and Engineering (FEL) Czech Technical University (CTU), Prague
Dr. Manuj Mukherjee Email: manuj@iiitd.ac.in	Assistant Professor, Department of Electrical Engineering Indraprastha Institute of Information Technology (IIIT) Delhi