Sagnik Chatterjee

C-214, Old Boy's Hostel, Indraprastha Institute of Information Technology Delhi, 110020

🌐 www.iiitd.edu.in/~sagnikc ✉ sagnikc@iiitd.ac.in 🐦 @chatsagnik ⌂ /chatsagnik ▶ DBLP 📖 Scholar

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) **CGPA**: 8.78
Aug '13 - Aug '17 B.Tech in Computer Science and Engineering	Maulana Abul Kalam Azad University of Technology, Kolkata **CGPA**: 8.10

Research Internships

Jul-Sep '23	**IDA research group, Czech Technical University, Prague (CTU)** Hosted by Dr. Jakub Marecek and Dr. Vyachselav Kungurtsev.

Peer-reviewed Papers

Quantum Boosting using Domain-Partitioning Hypotheses
Sagnik Chatterjee, Rohan Bhatia, Parmeet Singh Chani, and Debajyoti Bera

Journal	Quantum Machine Intelligence 5, 33 (2023). [DOI].
Conference	6th Quantum Techniques in Machine Learning (QTML 2022).
Poster	25th Conference on Quantum Information Processing (QIP 2022). *Online*.

Informal and Other Publications

Quantum Solutions to the Privacy vs. Utility Tradeoff

Submitted	*Sagnik Chatterjee*, Vyacheslav Kungurtsev

Efficient Quantum Agnostic Improper Learning of Decision Trees

Submitted	*Sagnik Chatterjee*, Tharrmashastha SAPV, and Debajyoti Bera

Applying the Quantum Alternating Operator Ansatz to the Graph Matching Problem
Sagnik Chatterjee, Debajyoti Bera

Poster	Extended Abstract at AQIS'20. Poster at QIP'21.

Teaching

IIIT-D Winter Semester	2023	Teaching Assistant	Introduction to Quantum Computing
IIIT-D Refresher Module	2022	**Instructor**	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

Quantum Solutions to the Privacy vs. Utility Tradeoff.	Ketchup Talk, IIIT-D	Sep'23
Efficient Quantum Agnostic Improper Learning of Decision Trees.	University of Riga	Sep'23
	IDA seminar, Czech Technical University	Sep'23
Quantum Boosting using Domain-Partitioning Hypotheses.	IIIT-D CSE Seminar	Feb'23
	QTML 2022 (Naples, Italy)	Nov'22
	IIT-D Theory Seminar	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.	IIAS 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. https://twitter.com/KetchupIIITD.
DEC '21	Only student organizer for the QISE'21 workshop. https://acm-goa.github.io/QISE/.
FEB '20	Student organizer for the Indo-German Spring School on Algorithms for Big Data 2020, at IIIT-Delhi. https://sites.google.com/view/abd2020/home.
FEB '20	Organized the first India Quantum Computing Meetup in New Delhi. https://sites.google.com/iiitd.ac.in/indiaqcmeetup/home.

Workshops and Schools

IISc Bangalore	JTG/IEEE ITSoc Summer School 2023
FSTTCS'21 (*Online*)	Quantum Information Science and Engineering (QISE) 2022
IIIT Delhi	Indo-German Spring School on ALgorithms for Big Data 2020
ISI Kolkata	Workshop on Boolean Functions 2020
IIAS Jerusalem	The 4th Advanced Winter School in Computer Science and Engineering 2019

Industry Experience

NOV '18-MAR '19 SEP '17-OCT '18	**Oracle Financial Services Software Limited** <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	**Infosys Limited** <u>Systems Engineering Intern:</u> Full Stack Developer.
SUMMER 2016	**AlCircle Pte Ltd** <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@iitd.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