

Sagnik Chatterjee

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Biography

I am a Ph.D. student in the [BraQIIT](#) 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. Recently, I have also started gaining an interest in provably secure and private models from a quantum learning theoretic perspective.

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 '23 to SEP '23	Czech Technical University, Prague (CTU) Supervised by Vyacheslav Kungurtsev.
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Peer-reviewed Journal Papers

AUG '22	Quantum Boosting using Domain-Partitioning Hypotheses <i>Sagnik Chatterjee, Rohan Bhatia, Parmeet Singh Chani, and Debajyoti Bera</i> QUANTUM MACHINE INTELLIGENCE (QMI). Talk at QTML'22. Poster at QIP'22.
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Extended Abstracts, Posters, Preprints & Under Submission

JUL '23 <i>Submitted</i>	Quantum Solutions to the Privacy vs. Utility Tradeoff <i>Sagnik Chatterjee, Vyacheslav Kungurtsev</i>
MAY '23 <i>Submitted</i>	Efficient Quantum Agnostic Improper Learning of Decision Trees <i>Sagnik Chatterjee, Tharmashastha SAPV, and Debajyoti Bera</i>
NOV '20	Applying the Quantum Alternating Operator Ansatz to the Graph Matching Problem <i>Sagnik Chatterjee, Debajyoti Bera</i> Extended Abstract at AQIS'20. Poster at QIP'21.

Invited Talks

Quantum Boosting using Domain-Partitioning Hypotheses	IIIT-D CSE Seminar QTML 2022 (Naples, Italy) IIT-D Theory Seminar	FEB'23 NOV'22 MAR'22
Spectral properties of Random Graphs (3 lectures) Hoffman's Chromatic Number Lower Bound	IIIT-D Spectral Graph Theory Reading Group IIIT-D Spectral Graph Theory Reading Group	JUN'23 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 Workshop (Co-located with FSTTCS'21)	DEC'21
Quantum Shallow Circuits	T-talk at Évariste(IIIT Math Club)	OCT'20
Quantum Algorithms for solving Linear Systems of Equations	IIAS 4th CSE Winter School	DEC'19
Quantum Machine Learning	FDP at JNTU, Anantapur (<i>Online</i>) Delhi Quantum Computing Meetup	DEC'20 FEB'20

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

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-goal.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

JTG/IEEE ITSoc Summer School 2023	IISc Bangalore
Quantum Information Science and Engineering 2022	Online
Indo-German Spring School on ALgorithms for Big Data 2020	IIIT Delhi
Sensitivity, Query Complexity, Communication Complexity and Fourier Analysis of Boolean Functions	ISI Kolkata
The 4th Advanced School in Computer Science and Engineering	IIAS Jerusalem

Industry Experience

NOV '18-MAR '19	Oracle Financial Services Software Limited Staff Consultant: Developed data models and automated report generation during EOD operations. Bank successfully went live in December 2018.
SEP '17-OCT '18 <i>Technologies</i>	Associate Consultant: Customized the business logic of our core product FCUBS. FLEXCUBE, BI-Publisher, JAVA, JSP, Weblogic, JS, SOAP, Spring, Hibernate, Oracle 12c, SQL.
FEB '17-MAY '17 <i>Technologies</i>	Infosys Limited Systems Engineering Intern (Full Stack Developer): Agile methodology. JAVA, Weblogic, Angular, REST, Spring, Hibernate ORM, Oracle 12c, SQL, PL/SQL.
SUMMER 2016 <i>Technologies</i>	AlCircle Pte Ltd Data-Analyst Intern (Python Application Developer): Created an application to source content for the editorial team. Crawler+Database Insertion+Automated Updates. Python, MySQL, REST.

References

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