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.

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 - present Quantum Learning Theory	**Czech Technical University, Prague (CTU)** Supervised by Vyachselav Kungurtsev

Preprints & Under Submission

Jul '23 *Submitted*	**Quantum Solutions to the Privacy vs. Utility Tradeoff** *Sagnik Chatterjee*, Vyacheslav Kungurtsev
May '23 *Submitted*	**Efficient Quantum Agnostic Improper Learning of Decision Trees** *Sagnik Chatterjee*, Tharrmashastha SAPV, and Debajyoti Bera
Jul '23	**Applying the Quantum Alternating Operator Ansatz to the Graph Matching Problem** *Sagnik Chatterjee*, Debajyoti Bera Extended Abstract at AQIS'20. Poster at QIP'21.

Peer-reviewed Journal Papers

Aug '22	**Quantum Boosting using Domain-Partitioning Hypotheses** *Sagnik Chatterjee*, Rohan Bhatia, Parmeet Singh Chani, and Debajyoti Bera Quantum Machine Intelligence (QMI). Talk at QTML'22. Poster at QIP'22.

Invited Talks

Quantum Boosting using Domain-Partitioning Hypotheses	IIIT-D CSE Seminar	Feb'23
	QTML 2022 (Naples, Italy)	Nov'22
	IIT-D Theory Seminar	Mar'22
Spectral properties of Random Graphs (3 lectures)	Spectral Graph Theory Reading Group	Jun'23
Hoffman's Chromatic Number Lower Bound	Spectral Graph Theory Reading Group	Jun'23
Improved Quantum Query Upper Bounds via Decision Trees	IIIT-D Theory Reading Group	May'23
Applying QAOA+ to the Graph Matching Problem	QISE Workshop	Dec'21
Quantum Shallow Circuits	T-talk at Évariste(IIIT Math Club)	Oct'20
Quantum Algorithms for Linear Systems of Equations	IIAS 4th CSE Winter School	Dec'19
Quantum Machine Learning	FDP at JNTU, Anantapur (*Online*)	Dec'20
	Delhi Quantum Computing Meetup	Feb'20

Teaching

IIIT-D Winter Semester	2023	Introduction to Quantum Computing
IIIT-D Refresher Module	2022	Introduction to C Programming
IIIT-D Summer Semester	2022	Data Structures and Algorithms
IIIT-D Winter Semester	2020, 2021	Theory of Computation
IIIT-D Monsoon Semester	2020, 2021	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-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

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

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