Sagnik Chatterjee

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Current Position and Research Interests

I am a Ph.D. candidate at **IIIT Delhi**, advised by **Dr. Debajyoti Bera**. My main research interests include quantum algorithms, optimization, and learning theory.

Research

Oct '22

Efficient Quantum Agnostic Improper Learning of Decision Trees
Submitted.
Pre-print at https://arxiv.org/abs/2210.00212.

Oct '21

Quantum Boosting using Domain-Partitioning Hypotheses
Accepted for a short talk at QTML'22. Poster presented at QIP'22.
Pre-print at https://arxiv.org/abs/2110.12793.

Nov '20

Applying the Quantum Alternating Operator Ansatz to the Graph Matching Problem
Poster presented at QIP'21. Extended abstract accepted at AQIS'20.
Pre-print at https://arxiv.org/abs/2011.11918.

Education

Jul '19 to present	**Indraprastha Institute of Information Technology, Delhi** Doctoral Student (Ph.D.) in *Computer Science*
Aug '17	**Maulana Abul Kalam Azad University of Technology, Kolkata** Bachelor of Technology in *Computer Science and Engineering* (8.10/10)

Teaching Experience

Summer 2022	Teaching Assistant for **Data Structures and Algorithms** course.
Winter 2020, 2021	Teaching Assistant for **Theory of Computation** course.
Monsoon 2020, 2021	Teaching Assistant for **Modern Algorithm Design** course.

Selected Co-Curricular Activities

Mar '22 — Gave an invited talk on quantum boosting algorithms at the IIT-Delhi theoretical CS seminar. Slides at https://bit.ly/3MkjN9l.

Dec '20 — Gave a talk on Quantum Machine Learning at a Faculty Development program hosted by Jawaharlal Nehru Technological University, Anantapur. Slides at https://bit.ly/qmlslides.

Feb '20 — Selected to attend a workshop on **Sensitivity, Query Complexity, Communication Complexity and Fourier Analysis of Boolean Function** organized by the **Indian Statistical Institute**, Calcutta. https://bit.ly/isiworkshop20.

Jan '20 — Received 2nd place in the **IBM Q Awards**, Teach Me Quantum category. https://bit.ly/ibmqawards20

Dec '19 — Selected to attend the 4th Winter School in Computer Science and Engineering (on **The Mathematics of Quantum Computation**) organized by the **Israel Institute for Advanced Studies**, at the Hebrew University of Jerusalem. https://iias.huji.ac.il/SchoolCSE4.

Selected Extra-Curricular Activities

Aug '22 | Organizer and coordinator for Ketchup talks, at IIIT Delhi. https://twitter.com/KetchupIIITD.

Dec '21 | Only grad student to be part of the organizing committee for QISE'21 workshop (co-located with FSTTCS). https://acm-goa.github.io/QISE/.

Feb '20 | Helped organize 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 Quantum Computing Meetup in New Delhi, at IIIT-Delhi in association with the IBM advocates of India. https://bit.ly/indiaqc.

Industry Experience

Nov '18 to 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 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.

Feb'17 to May'17 | **Infosys Limited**
Systems Engineering Intern (Full Stack Developer): Agile methodology.

Technology Stack | JAVA, Weblogic, Angular, REST, Spring, Hibernate ORM, Oracle 12c, SQL, PL/SQL.

Summer 2016 | **AlCircle Pte Ltd**
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,
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Dr. Rohit Vaish | Assistant Professor, Department of Computer Science,
Indian Institute of Technology (IIT) Delhi
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