Subhasree Patro

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Education

PhD in Computer Science at University of Amsterdam (October 2018 – December 2022)
Supervisors: Prof. Harry Buhrman and Dr. Florian Speelman

MS by Research in Computer Science at International Institute of Information Technology, Hyderabad, India (2015 - 2018)
Supervisors: Dr. Indranil Chakrabarty and Dr. Kannan Srinathan

BTech in Computer Science at International Institute of Information Technology, Hyderabad, India (2006 - 2010)

Publications

Teleportation of Quantum Coherence
With Sohail, Arun K Pati, Vijeth Aradhya and Indranil Chakrabarty
Full version available on arXiv:2302.11499

Matching Triangles & Triangle Collection: Hardness based on a Weak Quantum Conjecture
With Andris Ambainis, Harry Buhrman, Koen Leijnse, and Florian Speelman
Full version available on arXiv:2207.11068

Memory Compression with Quantum Random-Access Gates
With Harry Buhrman, Bruno Loff, and Florian Speelman
Appeared in the proceedings of TQC 2022

Improved Quantum Query Upper Bounds based on Classical Decision Trees
With Arjan Cornelissen and Nikhil S. Mande
Appeared in the non-proceedings track of TQC 2022
Full version available on arXiv:2203.02968

Fine-Grained Complexity via Quantum Walks
With Harry Buhrman, Bruno Loff, and Florian Speelman
Appeared in non-proceedings of track of QIP 2022
Appeared in proceedings of ITCS 2022
Also appeared in non-proceedings track of TQC 2021

A Framework of Quantum Strong Exponential-Time Hypotheses
With Harry Buhrman and Florian Speelman
Appeared in the proceedings of STACS 2021
Also appeared in the non-proceedings track of TQC 2020

Impossibility of Cloning of Quantum Coherence
With Dhrumil Patel, Chiranjeevi Vanarasa, Indranil Chakrabarty, and Arun Kumar Pati
Published in Physical Review A 103, 2021

Non-Negativity of Conditional von Neumann Entropy and Global Unitary Operations
With Indranil Chakrabarty, Nirman Ganguly
Published in Physical Review A 96, 2017

[An Overview of Quantum Algorithms: Quantum Supremacy to Shor Factorization](#)
With Alvaro Piedrafita
Published in ISCAS 2020

Talks

Quantum Fine-Grained Complexity
-Invited talk at Fine-Grained Cryptography Workshop at FSTTCS 2022
-Invited (virtual) talk at Quantum Innovators Workshop IQC 2022

Improved Quantum Query Upper Bounds on Classical Decision Trees
-At FSTTCS on December 20, 2022

Matching Triangles and Triangle Collection
-Invited talk at Hon-Hai Research Institute on October 7, 2022

Memory Compression with Quantum Random-Access Gates
-Invited talk at IIIT-Hyderabad on August 4, 2022
-At TQC in July 2022
-Invited (virtual) talk at Stanford University on May 26, 2022
-Invited talk at IRIF, Paris in April 2022

Fine-Grained Complexity via Quantum Walks
-At QIP on March 11, 2022
-At ITCS on January 31, 2022
-At TQC on June 29, 2021 ([youtube video](#))
-Invited (virtual) talk at IRIF, Paris on June 24, 2021 ([youtube video](#))
-Invited (virtual) talk at NUS, Singapore on August 30, 2021
-Invited (virtual) talk at University of Bristol on November 10, 2021

A Framework of Quantum Strong Exponential-Time Hypotheses
-At TQC on June 12, 2020 ([youtube video](#))
-At STACS on March 9, 2021 ([youtube video](#))
-Invited (virtual) talk at CQT, Singapore on February 2, 2021 ([youtube video](#))
-Invited (virtual) talk at QuSoft, CWI on Dec 21, 2020 ([youtube video](#))
-Invited talk at IIIT-Hyderabad, India on January 7, 2020

Quantum Fine-Grained Complexity (in layperson's terms)
-At the Scientific Meeting of CWI ([link to the video](#))

Quantum Walks and its Applications
-At IIIT Hyderabad, India on October 24, 2020 ([youtube video](#))

Non-Negativity of Conditional von Neumann Entropy and Global Unitary Operations
-Invited talk at QuSoft, CWI on November 2, 2018

Teaching Experience

Teaching Assistant
Introduction to Quantum Computing at University of Amsterdam (2019)
Discrete Mathematics and Linear Algebra at IIIT Hyderabad, India (2016-2018)

Lecturer at the CS of Department of KIIT Bhubaneshwar, India (2010-2011)
Taught C programming and Data Structures to first and second year Btech students

Work Experience

Build Engineer at Microsoft IDC (2012 - 2015)
System Center - Virtual Machine Manager Team: Responsibilities included Functional Testing and Unit Test Automation
WinSE Build and Packaging Team: Responsibilities included maintaining and optimizing the build and packaging automation for the updates to be shipped for Windows operating systems like Vista, Win7

Awards and Recognitions

Received Pat-On-The-Back award from Microsoft, IDC in the first year of joining

Received highest feedback score as a lecturer in the Computer Science Department of KIIT

Secured an all India rank of 1301 in AIEEE'06 exam, an entrance test taken by about eight hundred thousand students all over the country

Qualified State Level Maths Olympiad in Grade 11, 2004, secured an all India rank of 42 in National Cyber Olympiad in Grade 10, 2003

Professional Service

Part of the WIQD organizing committee from January 2021 to October 2021

Subreviewer for FOCS, STOC, MFCS, QIP, ITCS, TQC, ICALP, SOFSEM

Co-organizer for QuSoft seminars from 2019 to 2021

References

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