

Subhransu Dey

📍 Sangha Sarani Makaltala, P.O. Bally Durgapur, Howrah, West Bengal, India 71205
📍 Indian Institute of Technology, Jodhpur, Karwar, NH 62, Jodhpur Rajasthan, India 342030

✉ subhransudey2002@gmail.com
✉ P25PH0018@iitj.ac.in
📞 (+91)7595973995
🌐 subhransudey.netlify.app
🆔 0009-0005-2923-6986

🎓 Education

Indian Institute of Technology, Jodhpur

Junior Research Fellow (JRF) in Physics

S.N. BOSE NATIONAL CENTRE FOR BASIC SCIENCES (SNBNCBS)

Master of Science (M.Sc) in Physical Science (Score: 77.4%)

Serampore College (University of Calcutta)

Bachelor of Science (HONS) (B.Sc. (Hons)) CGPA 8.160/10.0

Belur High School

Higher Secondary, Score: 87.80%

Patha Bhavan Dankuni

Madhyamik (Secondary Education), Score: 84.85%

Jodhpur, Rajasthan

Aug. 2025 – Present

Salt Lake, Kolkata

Aug. 2023 – July 2025

Serampore, West Bengal

Nov. 2020 – Aug 2023

Belur, West Bengal

July. 2018 – Aug 2020

Dankuni, West Bengal

Jan 2005 – March 2020

📖 Areas of Interest

- Quantum Information
- Quantum Resource Theory
- Dynamical Quantum Resource Theory
- Quantum Computation

🔬 Research Projects

Efficient Simulation of Stabilizer Circuits

Jan – June, 2025

Supervisor: Dr. Bhaskar Mukherjee and Dr. Sanku Paul, SNBNCBS, KOLKATA

- Explored the efficient classical simulation of quantum circuits under the stabilizer formalism using the Gottesman-Knill theorem.
- Implemented tableau-based simulation techniques that enable Clifford gate operations and measurements to be performed in polynomial time.
- Analyzed entanglement dynamics in stochastic stabilizer circuits.
- Contributed insights into measurement-induced phase transitions in quantum circuits.
- Bridged theoretical aspects of quantum computing with practical simulation strategies.
- The work supports further understanding of quantum error correction and scalable quantum systems.

An Introduction of Quantum Error Correction

Aug - Dec, 2024

Supervisor: Prof. Archan S Majumdar, SNBNCBS, KOLKATA

- Studying the importance of quantum error correction (QEC) in maintaining coherence in quantum systems and ensuring fault-tolerant quantum computation.
- Explored various error-correcting codes, including the 3-qubit repetition code, bit flip code, phase flip code, 5-qubit code, and 9-qubit Shor code.
- Introduced to the stabilizer formalism as a framework for understanding quantum codes.

An Introduction to Quantum Information Theory

June-July 2024

Summer Research Project, Supervisor: Prof. Archan S Majumdar, SNBNCBS, KOLKATA

- Explored the fundamental concepts of quantum information theory, including postulates of quantum mechanics, quantum states, no-cloning theorem, single elementary system, composite system, trace distance, and fidelity.
- Studied advanced topics such as the EPR paradox, hidden variable theory, Bell's inequality, and quantum teleportation as an application of entanglement.
- Concluded the project by studying quantum channels and their types, focusing on their role in the transmission of quantum information.

Software and Programming Skills

Programming Languages: Python, HTML, CSS, JavaScript

Developer Tools & Scientific Tools: Ubuntu, PyCharm, Anaconda, Jupyter Notebook, Visual Studio Code, OriginLab, Microsoft Office Softwares, LaTeX, Overleaf, Texmaker, Arduino

Libraries: Pandas, NumPy, Matplotlib, Scipy, Quiskit, Qutip

Awards & Achievements

Secured All India Rank 59 in GATE <i>2026</i>	<i>March</i>	<i>July 2023</i>	
			Selected for M.Sc. at IIT Delhi <i>July 2023</i>
Secured All India Rank 95 in NET JRF-LS (UGC)	<i>July 2024</i>		Selected for Integrated Ph.D at SNBNCBS <i>July 2023</i>
Recipient of Institute Fellowship <i>S.N. Bose National Centre for Basic Sciences, Kolkata</i>	<i>Aug 2023 – Present</i>		Qualified TIFR (JEST) Written Exam <i>TIFR Mumbai, NCRA Pune</i> <i>July 2023</i>
Selected for Integrated Ph.D at IISER Kolkata	<i>Aug 2023</i>		AIR 20 in IACS M.Sc. Entrance <i>June 2023</i>
			AIR 57 in JEST (Physics) <i>April 2023</i>
Selected for Integrated Ph.D at IIT Kanpur			AIR 103 in IIT-JAM (Physics) <i>March 2023</i>

Conferences, Seminars and Workshops Attended

Quantum Foundations, Technology and Applications (QFTA)
Organised at IISER Mohali Dec 4-8,2025

Languages

Native/Professional Working Proficiency: English, Bengali, Hindi

Hobbies & Interests

Sciences Quizzes

Reading

Playing Online Games

Web Development