

ASHESH KUMAR GUPTA

Masters in Physics

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LUTECH SPA

Present

Quantum Resarcher

- Developing QCNNs for classifying Medical Images
- Developing the MyQLM package for the QOptiva Quantum Simulator

MAGNITION

May - Nov 2024

Co-Founder, Magnition

- We are building a new sensing device that can detect a magnetic stylus(pen) and take that as an input for writing on electronic devices.
- The digitizer can be paired with any LCD over it and be integrated to build a complete product.

EDUCATION

2025 - Present

Masters Quantum Science and Technology

Università degli studi di Bari Aldo Moro

2022 - 2024

M.Sc. Physics

CPI: 8.53

IIT Gandhinagar

2019 - 2022

B.Sc. Physics

CPI: 8.45

Jadavpur University

PATENTS AND PUBLICATIONS

Oct 2025

Notton, Cassandre, et al. "Establishing Baselines for Photonic Quantum Machine Learning: Insights from an Open, Collaborative Initiative." [arXiv:2510.25839 \(2025\)](#).

Sep 2024

A SYSTEM AND A METHOD FOR MAGNETO-MECHANICAL DIGITIZER WITH ELECTRICAL DETECTION

- Filed a Provisional Patent, Docket No. 2415001IN-PS in the CGPDTM (Indian Patent office)

May 2024

Titled Mott Insulator in Quantum Cavity: [Link](#)

Ashesh Kumar Gupta, Prasanna B Venkatesh

Apr 2023

Establishing a Quantum Key Distribution (QKD) Channel using a continuous photon source : [Project Link](#)

INTERNSHIPS

Jan-Dec 2021

Research Intern, TIFR Mumbai

Prof. Vijay A Singh, President, IAPT

- Explaining the effects of impurities on Graphene.
- Extended the work on calculating the density of states of impure Graphene with the help of Green's Function.

Link: [Project Link](#)

Sep'23 - Jan'24

Research Intern, Classiq

Lior Gazit; Gal Winer

- We executed a quantum simulation of Ising Hamiltonian on quantum hardware to study the utility of quantum algorithms before fault tolerance.
- Using the Classiq platform, we adapted the algorithm according to the hardware connectivity map.

PROJECTS

- | | | |
|-----------------|--|----------------------------|
| Aug'23 - Apr'24 | Quantum Phase Transition Enhanced Force Sensing (Masters' Thesis) | Prof. Prasanna B Venkatesh |
| | <ul style="list-style-type: none">• We seek to expand the study of the quantum phases of a tilted Mott insulator pioneered by Sachdev in 2002 to the case of an intra-cavity Mott insulator (MI) studied in some detail first by Larson at el in 2008.• We were able to identify phase transition points by studying the Fidelity Susceptibility of the tilted system | |
| Feb-Apr 2023 | Classical Model of BB84 Protocol, IIT Gandhinagar | Prof. Chandan K Mishra |
| | <ul style="list-style-type: none">• Developed a model to demonstrate the BB84 quantum encryption protocol classically.• Successfully performed encryption using laser and photodetector. | |
| | Link: Project Link | |

SUMMER SCHOOLS AND CONFERENCES

- | | | |
|-------------|--|--------------------|
| July 2025 | European Quantum Technology Summer School | Paderborn, Germany |
| August 2025 | Summer School on Many-Body Correlations in Quantum Technologies | Cagliari, Italy |

ACHIEVEMENTS

- | | | |
|------------|---|--|
| March 2021 | NIUS 2021 Scholarship | Tata Institute of Fundamental Research |
| | Selected for National Initiative for Undergraduates Students camp 17.1 organised by Tata Institute of Fundamental Research in 2021 and awarded a scholarship. | |

SKILL SUMMARY

Passions: Quantum Optics, Quantum Many Body Problems, Quantum Algorithms

Programming Languages: Python, Julia, C++(Basics), Arduino programming, MATLAB, Dart

Experience: QuTip, Julia, Qiskit, Classiq, Cirq PennyLane, TensorFlow, Arduino IDE, PyTorch, Flutter App Development

Soft Skills: Innovative Thinking, Critical Thinking, Creativity, Technical Proficiency, Attention to Detail, Problem Solving, Adaptability.