

# Nadeem Khan

Research Assistant

Solution-oriented, interested in AMO physics , computational physics , Simulation & Quantum Computing



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Delhi

## EXPERIENCE

### Research Assistant

Centre For Quantum Science & Technology ,IIT Hyderabad

04/2022 - Present Hyderabad

Achievements/Tasks

- Assisted the research on **Quantum Isometric Evolution** of quantum states. Analytically considered the cases of separability spectrum problem and evolution of states under **Global Isometry** .
- Deployed **DNN/CNN** model to different quantum states.

Contact : [Indranil Chakrabarty](#)

### Data Science Intern

Sparks foundation

02/2022 - 04/2022 delhi - remote

Achievements/Tasks

- Deep learning modules on different optical states

Contact : <https://www.thesparksfoundationsingapore.org/>

## MASTER THESIS

Physics Department, Indian Institute Of Technology Delhi

12/2020 - 11/2021 delhi

**SUPERVISER : Dr Bodhaditya Santra & Dr Rashid Ahmed**

Achievements/Tasks

- Demonstrated faster and more efficient **Optical Tweezer atom arrangement** using **dynamic Hologram generation algorithm for neutral atoms**.
- **primarily increased the efficiency** of the algorithm to **98%** trap the **cold atom qubits** in the target sites of the desired pattern by modification.
- **Accomplished different mask pattern** on output plane through spatial light modulator and explored fourier holography and **deployed models of fourier optics**.

## EDUCATION

### Master of science [physics]

Jamia Milia Islamia

08/2019 - 07/2021 delhi

**SPECIALISATION : LASER SPECTROSCOPY & SCIENTIFIC PROGRAMMING**

- **8.23 CGPA**

### Bachelor of Science [ Major-physics & minor-computer science ]

BHUPAL NOBLES UNIVERSITY

07/2016 - 07/2019 UDAIPUR

**STATISTICAL PHYSICS , C++ , DSA , , PYTHON**

- **UNDERGRADUATE PROJECT** ; Optimization of Damped Circuit

## SKILLS

STATISTICAL MODELLING

DATA ANALYSIS

MATLAB

MAPLESOFT

QISKIT

ZEEMAX

R

MYSQL

PYTHON

QUANTITATIVE ANALYSIS

## ACHIEVEMENTS & PROJECTS

WINNER OF QUANTUM COMPUTING HACKATHON 2022 BY QUANTUM COALITION

- Our Team **QUANTUMFEED** was able to extend solutions to include error estimation and multi contributor scenarios on **Quantum Teleportation Challenge** by QBRAID and Amazon bracket, IBM
- Invited to attain QCHACK 23 by **NYU, Abu Dhabi**

QUANTUM COMPUTING DIPLOMA

- **QBRONZE79 BY WARSAW QUANTUM (QWORLD)**

- Completing daily assignment on quantum algorithms .

HARDWARE-AWARE SCIENTIFIC COMPUTING

- **SUMMER SCHOOL BY IISc & HEIDELBERG UNIVERSITY, GERMANY**

- Asynchronous computing method for solving PDEs at extreme level , Bayesian Data Assimilation and Inverse problems.
- Nonlinear eigenvalue on heterogeneous parallel architectures.

NANOMATERIALS LAB TRAINING

- **WORKSHOP BY Prof KHALID (Sunway University, Malaysia )**

- Fabrication techniques of graphene nanostructures ;Liquid-phase exfoliation, chemical -vapour decomposition , **Pulsed laser decomposition (PLD)**

## CERTIFICATES & COURSES

QUANTUM ALGORITHMS BY QKRISHI (05/2022 - 07/2022)

QUANTUM COMPUTING FOR FINANCE BY IIT KOTTAYAM

Qualified exams; IIT -JAM, CUCET, JMIET (01/2019 - 12/2019)

PYTHON PROGRAMMING BY PROJECT INSIGHT

MACHINE LEARNING BY UDEMY

## RESEARCH TOOLS

PYTHON ● ● ● ● ●

ZEMAX ● ● ● ○ ○

LATEX ● ● ● ● ●