



+91 9959308983



[kishorereddi1998@gmail.com](mailto:kishorereddi1998@gmail.com)



[www.linkedin.com/in/contact-kishore](https://www.linkedin.com/in/contact-kishore)



<https://github.com/kishore4362>

# Reddi Kishore

## Education

University of Hyderabad

Master of Science in Physics with CGPA of 7.76

May 2018 – Nov 2020

Hyderabad, Telangana, India

Rayalaseema University

Bachelor of Science with CGPA of 9.47

Jun 2015- Mar 2018

Kurnool, Andhra Pradesh

## Work Experience

Physics Teacher- Innovators International School, Visakhapatnam

Sept 2022- Feb 2024

- As a Physics teacher I used to take classes from 6<sup>th</sup> to 10<sup>th</sup>, demonstration of science experiments to make the students engage with subjects. Weekly lesson plannings, conducting tests and quizzes.

As a Project Student – University of Hyderabad

Mar 2019 – Nov 2021

- Worked as a Project student under the supervision of Dr. Jayita Lahiri, worked on preparation of Hexagonal Boron Nitrate (hBN) thin films using Chemical Vapour Deposition (CVD) method.

## Courses & Certifications

Quantum Computing for Natural Sciences

Sep-2023

- Certification for successful completion of course conducted by Hasso Plattner Institute using Qiskit platform.
- Electronic Structure theory and Calculation of Ground state energies of molecules using Variational Quantum Eigen solver.
- Molecular Dynamics, Light matter interactions and Calculation of excited state energies using SSVQE algorithm.

OpenHPI

Variational Algorithm Design course

Qiskit

- Which is an Advanced Quantum computing course for Natural Sciences, I learned to design customized algorithms for molecular simulations, Calculating Ground state and excited state energies.
- I got certification and badge for successful completion of the course.

Aug-2023

Qiskit Global Summer School 2023

Qiskit

- Two-week intensive course focused on foundations of Quantum computing.
- Brief Introduction on Entangled circuits, Quantum Query Algorithms, Phase Estimation and Factoring, Quantum Hardware and Super conducting qubits and Quantum Noise.

July-2023

Indigenous Quantum Simulator (QSim)

May-2023

- Quantum computing on Indigenous Quantum Simulator, course conducted by IIT Roorkee in collaboration with C-DAC.
- An Introduction course to Quantum Algorithms

IIT Roorkee

QC: Introduction to Algorithms and Implementation

May-July 2022

- It is my first course on Quantum computing by IISER Tirupati in collaboration with Qkrishi which makes me interested in Quantum computing

IISER Tirupati

## Projects

Quantum Simulation Ground state energy of H<sub>2</sub> molecule

Nov- 2023

- Simulation of ground state energy of H<sub>2</sub> molecule by using VQE algorithm on a Quantum simulator and a real Quantum Hardware.
- Then simulated the molecule on a noisy simulator to replicate the Quantum hardware and applied a Probabilistic Error Cancellation (PEC) to the measurement to reduce the error in the ground state energy. Project on [GitHub](#)

Quantum Optimization Methods

- Applications of Optimization techniques in Quantum Chemistry, Logistics, Finance etc.
- Concepts: Max-Cut method, QUBO technique, QAOA Algo, Travelling Salesman Problem (TSP) and Adiabatic Quantum computing. Project on [GitHub](#).

Quantum Machine Learning

Oct-2023

- Implementation of Supervised machine learning-Variational methods and QSVM
- Concepts of Quantum kernels, feature maps and parameterized circuits. Project on [GitHub](#)

Quantum Error Correction & Mitigation

Oct-2023

- This project is a part of Quantum Explorers event and successfully completed the labs and earned a badge
- Implementation of error mitigation techniques using Qiskit Runtime Services. Project of [GitHub](#)

Qiskit

## Variational Quantum Algorithm Design

Sept-2023

- Designed a Cost Function for Sub Space VQE to find excited state energies using Weights in a single optimization process Qiskit
- Using a classical optimizer to calculate the optimal parameters and eigenvalues for the several ansatzes. project on [GitHub](#).

## Quantum Computing and Qiskit101

Aug-2023

- This project is a part of Quantum Explorer's event, I successfully completed the lab and Earned badge
- It includes lab exercises on Superposition, Entanglement and Interference. Project on [GitHub](#)

## Grover's Search Algorithm

Sept-2023

Solved a 4 x 4 Sudoku by Using Grover's Search Algorithm to pick the desired numbers in the blanks. Project on [GitHub](#)

## Qiskit Global Summer School 2023

July– August 2023

- Successfully completed all the theory and lab exercises and earned a badge and Certificate for completion IBM Quantum
- Lab exercises includes entanglement circuits with Qiskit, Diving in Quantum Algorithms, Iterative Quantum Phase Estimation, and Quantum error mitigation. Project on [GitHub](#).

## IBM Quantum Spring challenge 2023

May-2023

- Successfully completed the Challenge and Earned a badge and Certificate
- Challenge includes labs on Dynamic Circuits, Quantum Teleportation, Iterative Phase Estimation, Quantum Error Correction and GHZ-state implementation on 125-Qubit real Quantum hardware. Project on [GitHub](#)

## Quantum Teleportation

July-2022

Implementation of Quantum teleportation protocol using OpenQASM on IBM Quantum lab. Project on [GitHub](#)

IBM Quantum

## Quantum Key Distribution

June 2023

A Theoretical project on Quantum secure key distribution protocols based on bipartite and tripartite photon entanglement.

## Technical Skills

**Languages:** Python, HTML, Fortran

**Technologies/Frameworks:** Linux, GitHub, Qiskit, IBM Quantum, NumPy, Pandas, Matplotlib, PyTorch

**Domains:** Quantum Simulations, Quantum Machine Learning, Quantum Cryptography.

## Conferences Attended

### Q-SITE conference Toronto 2023

- Attended Q-SITE Toronto 2023 Conference, Participated in Mini challenges conducted in the conference.
- Our team won the first price in Classiq mini challenge of worth 500CAD.

### QIQT International Conference 2023

- International Conference on Quantum Information and Quantum Technology 2023, hosted by the Indian Institute of Science Education and Research Kolkata

## Achievements & Badges

<ul style="list-style-type: none"><li>Qualified GATE-2022 Eligibility for Doctoral program admission into IIT's</li></ul>	<ul style="list-style-type: none"><li>Variational Algorithm Design Badge For Successful completion of VQA course from Qiskit textbook</li></ul>
<ul style="list-style-type: none"><li>Qualified APSET-2020 Eligibility for lectureship in Indian Universities &amp; Colleges</li></ul>	<ul style="list-style-type: none"><li>Badge of Quantum Excellence For Successful completion of Qiskit Global Summer School-2023</li></ul>
<ul style="list-style-type: none"><li>IBM Quantum Badge For successful completion IBM quantum spring challenge-2023</li></ul>	<ul style="list-style-type: none"><li>Captain Badge For completion of Entangled circuits lab exercise from Quantum explorers' event</li></ul>
<ul style="list-style-type: none"><li>Time Traveller Badge For completion Quantum Error Mitigation lab exercises on Quantum Explorer's event</li></ul>	<ul style="list-style-type: none"><li>Space Combatant Badge For Completion of Quantum Machine Learning lab exercises on Quantum Explorers event</li></ul>
<ul style="list-style-type: none"><li>IBM Quantum Safe Encryption Essentials Badge For Successful completion of course and Passed the End Assessment.</li></ul>	