SHISHEER S KAUSHIK

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Skills

Languages

English | Hindi | Kannada

Programming

Python | C | HTML | Verilog HDL

Softwares

VS Code | CST Studio Suite | OpenCV | Matlab | Notion

Quantum Development Frameworks

Qiskit | Cirq | Pennylane

Deep Learning Frameworks

Tensorflow | PyTorch

Hobbies

Reading | Travel Photography

Soft Skills

Teamwork | Leadership

Education

B N M Institute of Technology, Bengaluru, India

Bachelor of Technology - CGPA: 8.37

Electronics & Communication Engineering

July 2018 - 2022

Alvas Pre-University, India

Class XII (State Board) - Score: 86.5%

2016 - 2018

Jain Public School, India

Class X (CBSE AISSE) - CGPA: 9.0

2015 - 2016

IELTS - *7.5*

UG Courses

Matrices & Calculus

Complex Analysis & Differential Equations

Probability Theory & Random Processes

Engineering Physics and Quantum Mechanics

Experience

view in portfolio

Qkrishi Quantum Pvt. Ltd. - *Remote Research Intern*

Guide: Raghavendra V (Head of Research, Qkrishi)

November 2022 - Present

- Working on developing a novel quantum optimization algorithm to solve the travelling salesman problem using phase estimation technique by encoding the given distances between the cities as phases.
- Mainly focusing on constructing a unitary operators whose eigenvectors are the computational basis states and eigenvalues are various combinations of these phases, eventually applied for phase estimation algorithm.

Qworld Association (QIntern-2021) - *Summer Internship*

Mentor: Dr. Zeki Can Seskir (Doctoral Researcher and Coordinator of QTurkey)

June 2021 - August 2021

- The project focused mainly on creating a platform for a comprehensive and curated collection of resources aiming to help understand Quantum Computing.
- I was allotted to one respective group under a mentor to work on major computational issues faced during Quantum Application Programming, like “Quantum Error Correction”.
- During the course of my internship, I devised a Quantum Error Detection model based on surface error code, it enhanced my skills and knowledge in this particular field.

Elite Techno Groups - *Machine Learning Intern*

Guide: Mayank Arora (CEO and Founder at Elite-Techno)

August 2021 - September 2021

- During one month of the internship, I implemented an Inventory Management system by transmitting structured data network in JSON format.
- This system was used to keep track of products, perform sales analysis and generate a statement consisting of the purchase history of the company.

Projects

view in portfolio

Android Malware detection using Quantum Machine Learning

Jan 2023

The novel approach of this project provides the ability to detect malware on mobile devices. As the inference engine for malware detection, the SecML was utilized to evaluate the security of a malware detector which is based on Quantum Support Vector Machine (QSVM). The detection process is performed by taking into account the malware’s features, captured on the mobile devices. Experimental research shows that the SVMs are able to produce accurate classification results.

Implementing Quantum Stegenography using BB84 & Ekert91

February 2021

An Interactive model, to play around with the encryption and decryption process to send a secret message in an encrypted channel which works on Quantum key Distribution [BB84 & Ekert91 protocol].

IoT & Wireless Networks
Embedded Systems & VLSI Design
Networks Protocols & security
C & Python Application Programming

Summer Schools & Workshops

IBM Qiskit Summer School
IBM Quantum (3 Years) [view]

CirQuiT Summer School on Quantum Computing
RV College of Engineering (2021)

Quantum Computing Workshop
QWorld (2 courses) [view]

LPS Summer of Quantum
LPS Qubit Collaboratory (2 courses)

Online Courses

Quantum 101: Delft X
Edx - TU Delft University (2 courses)

Cryptography and Network Security
NPTEL (2022)

Quantum Computing With Qiskit
Udemy (1 course)

Introduction to Quantum Computing
Coursera - St Petersburg State University (1 course)

Achievements

IBM Certified Associate Developer- Qiskit v0.2X
Awarded IBM Qiskit Developer badge for demonstrating fundamental knowledge of quantum computing concepts and by being able to express them using Qiskit open source (SDK).

IBM Quantum Challenge
2021, 2022

Secured Advance Badge among 2000+ participants across the world and my results stood out in the top 25 contestants.

QC-Hackathon
September 2015

My project secured 7th place for building a QR-Code Generator using the Bernstein-Vazirani algorithm.

Quantum QR-Code Generator
March 2021 - April 2021

This model creates a QR-code for the respective words updated into the model obtained from the Bernstein-Vazirani algorithm. It uses data from a quantum computer instead of using pulsar data.

OpenCv Project- *Open-source platform for Image Classification*
Dec 2020 - Jan 2021

This project uses the face-recognition library in Python to find a celebrity look-alike from a picture that is being uploaded. The face-recognition library is built using dlib's state-of-the-art face recognition which uses CNN to classify several types of touch interaction from humans by learning the data pattern from a force sensor. The model had 98.38% computing similarity when tested on two distinct metrics based approaches such as Euclidean distance and Mahalanobis distance.

Designing Wearable Antenna - *UHB Micro-strip patch antenna*
May 2021 - July 2022

The aim of the project is to design and fabricate a very efficient, highly sensitive and low-cost micro-strip patch antenna with an etched customized logo which is tailored to perform the intended application of remotely monitoring the health.

Publications

View Publication

Wearable Antenna For Remote Health Monitoring
Published in IEEE-2023

This article presents the design and fabrication of a wearable, fully flexible and efficient micro-strip patch antenna pasted on both jeans textile and FR4 (lossy) material to operate at f = 2.66 GHz and f=2.3 GHz as a centre frequencies. This work discusses, experimental and numerical results of the antenna designed and fabricated. It is observed that the SAR value, which is an important parameter, is well within FCC standards, indicating that this proposed antenna is feasible to use for Tele-medical applications.

Extracurricular

view in portfolio

QWorld Association Global Workshops - *Academic Mentor*
QWorld is a non-profit global organisation that brings quantum computing researchers & enthusiasts together. As a mentor, I have actively participated in numerous workshops & events by guiding enthusiasts across the globe..

Bolt IOT - *Developer & Content Writer*
BOLT IOT is a group of professionals and students who foster IOT development.

University Lead at Community Classroom- *We Make Devs*
Mentoring on a road map track by providing hands-on training in various fields of scientific computing, collaborating with like-minded candidates in a community.

Student Fundraiser - *TYCIA Foundation & Valliappa Foundation*
Served as the Student fundraiser & influencer, by finding several donors for the #1000 and you campaign focusing on Tribal Girl child Education.