Keshav Bihani

+91 94069-54443
bihanikeshav@gmail.com

github.com/bihanikeshav
linkedin.com/in/bihanikeshav

EDUCATION

Indian Institute of Science Education & Research, Bhopal — Bhopal, India
BS-MS in Electrical Engineering & Computer Science, Minor in Physics | **CPI – 7.02** — **Aug 2017 - Jun 2022**

SKILLS

Languages	Python, JavaScript, Java, C++, R, Julia
Tools and Frameworks	Qiskit, Pennylane, Tensorflow, Pytorch, Git, NodeJS, ReactJS, Django, MySQL, MongoDB

PROJECTS

Quantum Machine Learning — **May 2021 — Jun 2022**
Supervisor: Dr. Kuntal Roy
Python, Qiskit, Pennylane, IMBQ, Quantum Algorithms, Quantum Neural Networks, GANs, TensorFlow, PyTorch, QuantumGAN

- Described a hybrid quantum variational autoencoder and trained it on MNIST and Udacity self-driving datasets, it showed better results when the latent space is compared with a simple classical VAE model.
- Explored and compared various existing Quantum CNN and Quantum GAN methods.
- Explored and implemented quantum algorithms like HHL, Grover's, QFT, which can be used as subroutines to gain a speedup in existing machine learning algorithms like SVM and PCA.

Quantum Bayesian Network on Titanic Survival dataset — **July 2022**
Qiskit, Python, Probabilistic ML

- Predicting the probabilities of survival on Titanic based on gender and age of 700+ passengers, and comparing with the classical model.

Automated highlights capturing of Twitch streams — **July 2022**
NodeJS, Python, LSTM

- Automatically identify various high engagement moments in a Twitch stream using a chat-frequency LSTM model.
- Classify the identified moment into various categories like funny, surprising, exciting, sad using a chat-content LSTM model.

Fermi Acceleration in Dynamical Billiards — **Dec 2020 — May 2021**
Supervisor: Dr. Kushal K. Shah
Python, Julia

- Simulated various dynamical billiards with oscillating boundaries in python and julia.
- Analyzed and compared Fermi Acceleration in various chaotic and non-chaotic billiards and commented on its ergodicity.

FavorIt — **Feb 2020**
Flutter, NodeJS, MySQL

- A community-based platform of providers and consumers wherein individuals in a closed community can get supplies or provide services in exchange for a non-monetary virtual currency, which then can be redeemed in various ways.

Drone and Flight Controller — **Aug 2019 — Dec 2019**
C++, STM32

- Coded a PID control loop on an STM-32 microcontroller using C++ to make a flight controller.
- Inputs from a 3-axis accelerometer were given to the microcontroller to control the PWM signal given to the motor.
- Tuned the PID values to achieve acceptable stability.

INDUSTRY EXPERIENCE

Freelance Developer — **July 2022 — Present**
Amit Pharma
ReactJS, Flutter, NodeJS, MongoDB

- Developing an app and a website for an online marketplace of medicines.
- Created an interface for sellers to add/modify various items.

Freelance App Developer — **Apr 2020 — Jun 2020**
Coursavy Technologies
Flutter, Firebase, NodeJS

- Implemented OAuth, e-mail login, subscription based courses, payment gateway and group video call.
- Created an admin interface to add/modify various data.

Achievements

GATE in Computer Science	AIR-2983, Score-506	2022
Hackathon at NIT-Hamirpur	4th Place	Feb 2021
JEE Advance 2017	AIR-6978	2017

Courses and Certificates

Computer Science Data Structures & Algorithms, Data Science & Machine Learning, Quantum Computer Science, Network Theory, Intelligent Robotics, Discrete Mathematics, Cryptography

Electrical Engineering Control Systems, Principles of Communications, Analog Circuits, Digital Circuits, Electronic Devices

Physics Quantum Physics, Physics through Computation, Electrodynamics and Electromagnetic Theory

Mathematics Linear Algebra, Multivariable Calculus, Probability and Statistics

Workshops Machine Learning at NIT-H, Internet of Things at IIT-BHU