

DHAIRYA PATEL

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EDUCATION

SARVAJANIK COLLEGE OF ENGINEERING AND TECHNOLOGY (SCET), SURAT

Gujarat, INDIA

Bachelor of Engineering in Computer Engineering, Gujarat Technical University (GTU)

Graduated June 2023

- CGPA: 8.52/10.00
- Relevant Coursework: Discrete Mathematics, Data Structures, Database Management Systems, Operating System, Computer Organization and Architecture, Analysis and Design of Algorithms, Computer Networks, Python for Data Science, Theory of Computation, IOT and applications, Compiler Design, Artificial Intelligence, Machine Learning, Cloud Computing, Information Security, Mobile Application Development.
- Design Project: Harbour Management System: Monitor Dock availability
 - Created the Prototype Model, crafted the Product Development Canvas and implemented the AEIOU Framework.
 - Contributed to application development using Kodular with in-built support for Firebase database, for real time data and user-authentication purposes.

PROFESSIONAL EXPERIENCE

SPACEKAYAK

INDIA

3D Design Intern, Design Team

October 2023-Present

- Conceptualized and created 3D assets for several landing pages for different companies.
- Pioneered in the design of Voxel assets using VoxEdit by Sandbox.

MONNAI INC.

Karnataka, INDIA

Software Engineering Intern, Engineering Department

February 2023-May 2023

- During the training phase, Researched and acquired essential knowledge about building a Simple Application Programming Interface (API) using Spring Boot.
- Accumulated various web scraping resources to revamp a Web Scraper that extracts profile information from employment-focused websites. Built using Python and its libraries (Beautiful Soup, Chrome driver, Selenium).
- Collaborated with a team on an Automation task built using Python. This task would accomplish easier access to the JSON data from a Python project.

SHARECHAT (MOHALLA TECH PVT. LTD.)

Karnataka, INDIA

3D Design Intern, Design Team

April 2022-April 2023

- Curated virtual 3D gifting assets for the social media platform ShareChat.
- Designed and optimized numerous 3D models from concept 2D artworks, which would be further used for animations.
- Conceptualized fundamental environments required for a 3D model in a scene.

FREELANCE 3D GENERALIST

Gujarat, INDIA

3D Generalist and NFT artist

April 2021-Present

- Designed a Chibi 3D character with environment for a popular rapper '@chxpo' in United States. Curated a billboard animation for animal healthcare company "Vetic" after collaborating with a software company "Razor Pay".
- Acquired substantial knowledge about Non-Fungible Tokens (NFTs) and generated more than five sales on a marketplace known as Foundation. Intriguing robot animations sold as NFTs, while working in collaboration with an environment artist.

KEY PROJECTS

QUANTUM MACHINE LEARNING-2

Project-8 Link

Title: Quantum Coin Flip Prediction

November 2023

- Engineered a Qiskit-based quantum circuit, employing a Hadamard gate to simulate a coin flip and generating a comprehensive dataset capturing measured quantum coin flips.
- Overcame data integration challenges by implementing a DecisionTree ML model for precise outcome prediction within the quantum context. The project features a 'tkinter' GUI for user interaction and graphical representations of outcomes.
- Positioned as a foundational exploration, the project exemplifies the symbiosis between quantum computing and machine learning, providing an accessible introduction and practical insights into their convergence. Executed the project locally using Spyder Python IDE.

QUANTUM MACHINE LEARNING-1

Project-7 Link

Title: Experimentation of Quantum Machine Learning vs Classical Machine Learning

November 2023

- Conducted a comparative analysis between Quantum Machine Learning (QML) and Classical Machine Learning (CML) using the Iris dataset. Implemented a quantum circuit with Qiskit, optimized parameters, and compared accuracy with a Classical Logistic Regression model.
- Challenges encountered with resulting accuracy of Quantum ML to be lower in comparison to Classical ML.

QUANTUM COMPUTING

Title: Quantum Cryptography (Quantum Key Distribution)

Project-6 Link

October 2023

- Implemented Quantum Cryptography's BB84/BBM92 Protocol using Qiskit and Python in a Streamlit app, demonstrating secure message transmission with individual basis bits for encoding/decoding.
- Emphasized educational exploration of quantum cryptography, featuring a local VSCode environment, Streamlit integration for user input, and quantum circuit visualization, illustrating potential advantages over classical cryptography.

NEURAL NETWORK

Title: Neural Network from scratch

Project-5 Link

September 2023

- Developed a Neural Network from scratch in Python, showcasing a profound comprehension of the underlying mathematical principles, following a detailed YouTube tutorial.
- Overcame challenges, particularly reshaping issues, during the project's execution in Google Colab. By leveraging insights from a Kaggle forum and meticulous code analysis, addressed errors that initially led to a mere ~10% accuracy. Subsequent improvements raised the model accuracy to ~90% in handwriting detection. The project utilized the MNIST dataset, offering valuable hands-on learning experiences.

ARTIFICIAL INTELLIGENCE IN HEALTHCARE-3

Title: Heart Disease Detection

Project-4 Link

September 2023

- Employed a UCI repository dataset with 76 attributes to diagnose Coronary Artery Disease, focusing on 14 key attributes across 302 instances for enhanced precision.
- Successfully managed missing data, implemented a Keras-based neural network model for both categorical and binary classifications, providing detailed accuracy assessments and classification reports to ensure robust diagnostic outcomes.

UNIQUE PROJECT ON DEEP LEARNING

Title: Playing Cards Detection and Recognition

Project-3 Link

May 2023

- Developed a personal project for playing cards detection using YOLO v8, focusing on practical learning objectives.
- Utilized a Kaggle dataset for training and testing, achieving a commendable average accuracy of approximately 86%. The project, executed entirely in Python on Google Colaboratory, prioritized the creation of a robust dataset for efficient model training and testing, with future considerations for additional features like card counting.

ARTIFICIAL INTELLIGENCE IN HEALTHCARE-2

Title: Heart Disease Classification

Project-2 Link

April 2023

- Executed the development of a machine learning model using Keras for the classification of heart diseases, involving meticulous preparation of the imported dataset.
- Conducted thorough Data Analysis and Visualization on the Cleveland Dataset, addressing missing values and optimizing the neural network model with the Adam optimizer. The project includes accuracy metrics and a confusion matrix for the Keras model.

ARTIFICIAL INTELLIGENCE IN HEALTHCARE-1

Title: DNA Classification

Project-1 Link

April 2023

- Executed the classification of DNA into respective attributes, emphasizing data preparation and missing data imputation.
- Implemented dataset splitting for training and testing, employing various machine learning algorithms such as KNeighbor, MLP, GaussianProcess, DecisionTree, and others for DNA classification. The project concludes with comprehensive classification reports, detailing the accuracy of each machine learning model.

SKILLS & INTERESTS

Softwares: Blender3D (Advanced), Unity3D (Novice), Substance Painter 3D (Novice), Arduino C (Novice)

Web Development: React (Novice), Next.js (Novice), Vercel for deployment (Novice)

Programming Environments: Spyder Python IDE, Google Colaboratory, VSCode

Programming: C (Intermediate), C# (Novice), Q# (Novice), Python (Intermediate), HTML (Novice), Spring Boot (Novice)

Interests: Astronomy, Quantum Computing, Acoustic Guitar, Ukulele, Keyboard, Vocals, Fitness training

LICENSES AND CERTIFICATIONS

QC101 QUANTUM COMPUTING AND QUANTUM MACHINE LEARNING

Credential

Organization: Udemy

October 2023

- A 12-hour course on fundamentals of Quantum Computing, Quantum Mechanics, Quantum Cryptography and Quantum Machine Learning. Applied quantum cryptography principles to establish secure communication, demonstrating proficiency in quantum encryption techniques.
- Developed, simulated, and debugged quantum programs on prominent platforms like IBM Qiskit and Microsoft Q#, showcasing hands-on experience in quantum software development.
- Executed quantum programs on real quantum computers through IBM Quantum Experience, translating theoretical knowledge into practical skills for a robust learning foundation. Trained a ML model using Quantum ML algorithms.