Tanishque Kumar

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Education

SRM University Kathakulanthur, Chennai
B.Tech in Computer Science and Engineering *2021 – 2025*

Technical Skills

Releavent Coursework: Machine Learning, Deep Learning, Statistics, ,Big Data Analytics,Probability and Discrete Mathematics,Data Structures and Algorithms, Quantum Computation,Devops and CICD Pipelines.

Programming Languages: Python, C++, SQL, MATLAB

Frameworks: TensorFlow, PyTorch, Keras, Bootstrap

Libraries & Tools: NumPy, Pandas, Scikit-learn, OpenCV, NLTK, Git, Docker, AWS

Projects

LipSyncInsight Python,Tensorflow-Keras,LSTM,BI-LSTM model
Deep Learning

- Developed a web app in which it can read Lip of the human being and predict what is it trying to say.
- for deploying as a webapp I used streamlit.

Super Resolution of Image using SRGAN Python,OpenCV,Transfer Learning, Tensorflow,CNN
Deep Learning

- The SRGAN (Super-Resolution Generative Adversarial Network) model was used to increase the resolution of the given low-resolution images to a decent resolution. SRGAN is a powerful deep learning technique that has been widely used for image super-resolution tasks.
- The SRGAN model was trained using the transfer learning concept, where the VGG19 model was used as the feature extractor, and the remaining layers of the SRGAN model were trained on the specific task of image super-resolution. This approach allowed the model to benefit from the rich feature representations learned by the VGG19 model, while also fine tuning the model to the specific task at hand.

Quantum Vault Python, Machine Learning, Quantum Computation, Quantum Key Distribution
Quantum Computing

- Engineered an anomaly detection software powered with Quantum Machine learning and Artificial Intelligence poised to redefine how organizations handle sensitive and confidential information, ensuring both security and efficiency.
- Clasped a groundbreaking fintech pursuits that was developed over the time to enhance the data catastrophe and provide over 4 layers of security in the form of superposition, Hilbert Spaces, homomorphic encryption and Quantum Key distribution (QKD) and achieved data contamination value of 0.01 and test loss of 2.687 with a successful implementation of ZZ Feature Maps.

Cancer Image Classifier Using HQCNN Python, Machine Learning, CNN, QCNN, Perceptron, PyTorch
Deep Learning and Quantum Machine Learning

- Developed a novel Hybrid Quantum Convolutional Neural Network (HQCNN) model for the classification of esophageal cancer images.
- Integration of parameterized quantum circuits into the convolutional and pooling layers to leverage quantum computing's unique capabilities for feature extraction and dimensionality reduction.
- Achieving an impressive classification accuracy of **99.82 percentage** on the esophageal cancer image dataset, outperforming a conventional CNN model.

Experience

Junior Quantum Research Intern Nov 2022-July 2023

Qkrishi

• During my tenure as a Quantum Research Intern at Qkrishi, a leader in quantum computing applications, contributed to the research and development team focused on leveraging quantum machine learning algorithms for fraud detection. My work involved developing and testing novel quantum-inspired approaches to improve the accuracy and efficiency of fraud detection systems.

• Deployed and evaluated various quantum machine learning algorithms, such as Quantum Support Vector Machine (QSVM) and Variational Quantum Classifier(VQC), to process complex data and identify fraudulent patterns and even making comparision with the classical machine learning algorithms like SVM.

• During my tenure as a Quantum Research Intern at Qkrishi, I was recognized for my innovative contributions and strong performance. As a result, I received a letter of recommendation from the organization, affirming my skills and potential in the field of quantum computing.

Awards and Achievements

• **Runner up** in Leap'24 Ideathon+hackathon conducted by IEEE CS

• Was a part of **Samsung Prism** and Contributed with RD team of Samsung on Multimodal Emotional Gesture Recognition by facial expressions, voice intonations and human gestures. Implemented model using Python and Deep Learning Concepts

• Received a **Certificate of Appreciation** at Felicitation Event conducted by SRMIST for securing an internship, recognizing dedication and hard work in advancing professional development.

• Was an **AI/ML Mentor** at Quantathon 1.0 conducted by Quantum Computing Club SRM

• Contributing in **National Quantum Mission** under a Concerned faculty.

Campus Engagement

President

Quantum Computing Club SRM

• Led the Quantum Computing Club, growing membership and fostering a collaborative environment for students passionate about quantum technologies.

• Planned, and directed workshops on quantum computing highlights to further knowledge regarding quantum principles which are held by experts in the industry.

• Worked with university departments to receive sponsorships and other resources, expanding the club's events and outreach efforts.

ML Lead

Swift Coding Club SRM

• Led innovative projects at Swift Coding Club, seamlessly merging theoretical knowledge with practical applications. I navigated the club's focus on enhancing comprehension of machine learning and deep learning concepts, refining both technical prowess and leadership acumen.

Course Completion

• Recently completed a course on **Advanced Machine Learning on Google Cloud Specialization offered by Google on Coursera**.

• Last Summer attended **IBM Qiskit Summer School 2023** lauched by IBM Qiskit and was awarded by a **Certificate of Excellance**.

• Completed a AWS Machine Learnig Course offered by **Amazon AWS**.