

SULAY SHAH

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EDUCATION

B. Tech(Hons) in ICT with minors in Computational Science

2016 - 2020

Dhirubhai Ambani Institute of Information and Communication Technology. **CGPA : 7.51/10**

SKILLS AND EXPERTISE

Languages Known: Python, C++, Javascript

Libraries and Technologies: MATLAB, PostgreSQL, Git, Tensorflow, scikit-learn, Node.js

INTERNSHIP/TRAININGS

Google Summer of Code contributor, moja global

May 2020 - Aug 2020

- This project is for implementation of new models to monitor land sector GHG emissions and support sustainable land management in C++. This project involves specifically implementing the agricultural soils model that are used to estimate non-CO2 GHG emissions from agricultural practices.

Research Trainee, Space Applications Centre, ISRO, Ahmedabad

May 2019 - Aug 2019

- Implemented operational Satellite derived Soil Moisture algorithm with corrections in Python environment and generated standalone application/processor as validated version 1.0 at VEDAS and MOSDAC web portal. Also, Developed a GUI based Automated Operational framework in Python environment for real time monitoring of multiple ground stations data along with satellite-derived data.

VOLUNTEER EXPERIENCE

Volunteered at Anoopam Mission in Dec - 2017. This was aimed at closely observing and contributing to an NGO providing many outstanding services, for the poor and disabled people in the outskirts of Anand.

PROJECTS

Cropland delineation using Gradient Boosting methods

- Generated a mask of cultivated and uncultivated land from Sentinel-2 data using gradient boosting methods like XGBoost, LightGBM, Catboost and analysed the differences in the algorithms. Catboost performed the best with 96% accuracy after removing edges from the images. This project can be further extended to crop classification.

Clustering POIs into commercial markets

- Clustered OpenStreetMap point of interests for New Delhi region into commercial markets/centres using DBSCAN clustering algorithm. Also, gave labels to the markets according to their location in the city.

Customer Complaint App

- Part of a group of 10 people who made a customer complaint app which took complaints from social media platforms, performed sentiment analysis to get the type of complaint, displayed them on a dashboard for the company, automatically distributed work among the workers and gave the customer a timeline of work done. For sentiment analysis, Microsoft Azure Text Analysis and for testing Selenium was used.

Parallelization of Minimax algorithm for Tic Tac Toe

- Developed a multicore parallelized implementation of the minimax algorithm by reducing recursive dependencies in C using `openmp` in order to increase the speed tree traversal in the search of optimal moves.

Quantum Neural Networks

- Implemented Quantum Neural Networks for prediction using `qiskit` according to a paper 'An artificial neuron implemented on a quantum processor'

Credit Card Fraud Detection

- Applied over-sampling (SMOTE), down-sampling and ensemble method to handle data-imbalance. Implemented a neural and XGBoost for binary classification.

Classification of EEG data

- Applied PCA on 3D EEG data for dimensionality reduction. Performed multiclass classification using Neural Networks, SVM, LDA, Decision Trees and Random Forests.

Football League Database

- Made a football league database in PostgreSQL which had data of players, managers, stadiums, matches, goals scored. Created queries related to statistics for one season.

Ecological Network Analysis

- Analyzed the south Florida food web network using `networkx` in Python. Detected important species using centrality analysis and communities using Louvain algorithm. Also, did motif analysis to understand the internal structure of network i.e competition between species.

Traffic Simulation

- Implemented a simulation and visualization for traffic in the Nagel Schreckenberg cellular automaton model for 3 lanes. Accounted for probabilistic events like lane changes and accidents.

POSITIONS OF RESPONSIBILITY

Captain of DA-IICT's Table Tennis team	2018-2019
Core member of Headrush, the DAIICT Quiz Club	2018-2019
Co-ordinator of DJ Wars event at Synapse	2018