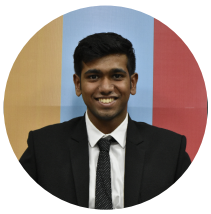
VARAD KSHIRSAGAR



B.E. (Hons.) Computer Science | BITS Pilani Hyderabad Campus

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github.com/Varad2305

WORK EXPERIENCE

Research Intern

Technical University of Munich

Nov 2020 – ongoing Pune, India

- Working on developing a framework that assigns an anomaly score to each satellite captured CO2 data based on how coherent it is with its surrounding points and contextual data
- Generated interactive visualisations of existing data to get a better understanding
- Developed statistical and machine learning models to verify the utility of context providing datasets
- Generated visualisations to compare the results of the statistical and machine learning models for better understanding

Full Stack Development Intern

Steinn Labs

Jan 2020 – April 2020 Pune, India

- Worked on a report generation system built in Node, ExpressJS, CubeJS, AngularJS and MySQL
- Developed MySQL queries in CubeJS
- Wrote a RESTful backend API in Node to perform CRUD operations in the database
- Wrote a Python script to create and update aggregate tables every midnight

Artificial Intelligence Intern

Innovapptive Inc.

May 2020 – July 2020 Hyderabad, India

- Worked on sound anomaly detection in an industrial setting
- Fully developed an end to end system with a mobile phone app, an AWS backend server and a React web application as a minimum demo-able product in a conference room
- Built two deep learning models which could first, detect anomalies in incoming sound data and then further localise the direction of the anomaly given the sound that was captured by more than 4 sound recorders kept in a circular fashion
- **Technologies used** : Python3, Tensorflow 2, React JS, React-Native

Full Stack Development Intern

India Meteorological Department

May 2019 – July 2019 Pune, India

- Worked in a team to build an internal web application for the management of IMD to help them understand the working status of all of their instruments at a glance
- Implemented statistics generation regarding instruments using the reports submitted by observatory inspectors
- Successfully deployed the project and trained people from 3 observatories to start using the system
- Developed in LAMP Stack

ACHIEVEMENTS

- Placed second in InnoHack 7.0, a city wide hackathon on developing Artificial Intelligence and Machine Learning solutions for industrial problems.

PROJECTS

Anomaly Detection in time series data

- Semester long research project based on detecting anomalies in streaming time series data
- Started off by studying and implementing existing machine learning as well as deep learning models in the field
- Designed and implemented an Attention based Bi-LSTM for anomaly detection in time series data with results comparable to some existing state of the art models while outright beating others
- Currently under review at an international conference

Network intrusion detection using Tree based CNN structure (published)

- Worked with a colleague on a hierarchical CNN structure to detect and classify malicious behaviour in networks
- Benchmarked the model on the NSLKDD dataset to achieve an accuracy comparable to existing state of the art approaches
- Paper accepted at ACM CODS-COMAD 21

Automated Algorithmic Intraday Trading

- Implemented automated algorithmic trading strategies which would place intraday buy or sell orders in the National Stock Exchange via the stock broker Zerodha
- Used the API provided by Zerodha to fetch live streaming data, use popular strategies on them and detect trends or signals without human intervention
- Currently working on implementing more strategies and fine-tuning existing ones
- Done as part of this Udemy course.

Factor model for the Indian Equity market

- Built several market factors in python using historical tick data and other financial data
- Created combinations of factors and compared performances
- Manually tested various strategies that involve the use of derivatives for risk management
- Built a small web application in Flask and React to fetch insider trading data from the NSE website and display it in a more convenient way