ROUNAK SARAF

2018183, Email: rounak18183@iiitd.ac.in

DOB: November 08, 2000

Address : C/o H.C. Soni, 505, Sheeba Apartments, Sector 28,
Near Galleria Market, Gurugram (Haryana), 122009

Github Link : https://github.com/Rounak183

Contact Number : 9354570424

Education

Indraprastha institute of Information Technology, Delhi — CGPA: 8.29
Bachelor's of Technology (Electronics and Communications Engineering) (till 6th Semester)
2018 – 2022

Delhi Public School, Ruby Park, Kolkata (West Bengal) — Percentage: 92.4
CBSE, Senior Secondary (Class XII)
2016 – 2018

Birla Bharati, Kolkata (West Bengal) — CGPA: 10
CBSE, Secondary (Class X)
2004 – 2016

Skills

Expertise Area	Data Structures, Algorithms, Python
Programming Languages	**Known** : Python, Java, Verilog, Matlab, Prolog, LaTeX, Git, HTML **Familiar** : C++,Bash, MySQL, Flask, Rest API, React, CSS,Django
Tools and Technologies	**Data Science and Distributed Systems** : Apache Spark Compute Framework, Spark SQL, Pyspark, Pandas, Dask, Scikit-Learn, Scipy, Git **Design** :Fusion 360, Eagle CAD, Meep, MPB, JavaFX, Eclipse, JavaScript **Computer Networks** : Cisco Packet Tracer
Technical Electives	**Programming and Operating Systems** : Advanced Programming, Data Structures and Algorithms,Operating Systems **Distributed Systems and Networking** : Database Management Systems, Systems Management, Computer Networks **Data Science** : Machine Learning, Artificial Intelligence, Natural Language Processing

Internships

Synopsys, Bangalore : Data Engineering Intern (Ongoing) — May 2021 - Present

- **Web** : Created a mailing system to provide instructions to the assigned employee of a **JIRA** issue for obtaining access to the code base using **web scrapping** and **web API** mechanisms. Integrated a weekly reminder system.
- **Data and Distributed Systems** : Programmed a congestion analysis feature running on a distributed compute framework using **PySpark** and **Pandas**. Designed the feature determining the density and intersection of two specific IC components in the IC design. Used Convex Hull algorithm for the implementation.

- **Workflow Management** : Created a dependency between the congestion analysis feature added and the system using **Apache Airflow** reflecting the functionality and conditional inclusion of the feature.

Projects

Artificial Intelligence

- Career Advisory System : Designed a system providing the best career options for a student considering students interests, skills and other relevant attributes provided as input by the user.
- Best First Search : Implemented the algorithm with the most optimal time and space complexity. Programmed the algorithm for finding out the minimum distance between any two cities (vertices) in a country (graph) using heuristics.
- Logistic Regression : Implemented logistic regression on a data of students predicting the salary level of a student with 89% accuracy.
- Natural Language Interface : Created an interactive user interface for the career advisory system using **Natural Language Toolkit** (nltk).

Natural Language Processing

- Fake News and Rumor Detection System : Led a team of 4 for creating a fake news and rumor detection system using various regression models. Compared the accuracy and speed of these models with a maximum achieved accuracy of **81%** using the Linear Regression model.
- Twitter Sentiment Analysis System : Led a team of 2 for creating a classification system for sentiment analysis. Implemented and compared various computational models on **25** features achieving a maximum accuracy of **78%**
- Viterbi Algorithm : Implemented the algorithm for word-tag definition from scratch. Obtained results for the Bigram and the Trigram model with **87.1%** and **89.5%** accuracy respectively.
- Glove and Word2Vec Models : Implemented the two models for English to Hindi language conversion.

General Programming

- Weather Prediction App : Developed an app which displays the real-time temperature, humidity and other meteorological factors using the **weather API**. Thoroughly tested the app using python **unit-test** framework.
- Betweenness Centrality : Implemented a solution to the betweenness centrality problem in graph theory which gives a measure of centrality in a graph based on shortest paths.
- 2D Object Transformations : Implemented an **app** to create and manipulate 2D projections of different varied shaped objects.

Machine Learning And Robotics

- **Multi-Layer Learning based NN-controller** : Designed a multi-layer learning based NN-controller using sigmoid functions. Real-time control system simulated for both single layer and multi-layer network.

Online Courses
Coursera

Neural Networks and Deep Learning**, *by Deeplearning.ai***
Distributed Computing with Spark SQL**,** *by UC Davis*

Achievements and Positions of Responsibilities

- JEE Mains : AIR - 4936 (99.9 Percentile) in world's biggest competitive exam.
- Teaching Assistant : Managed a class of 260 students. Responsible for grading, teaching for the Math course Ordinary/Partial Differential Equations.