Ritu Raj Singh

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EXPERIENCE

SDE(II)@Citrix

08/2022 – present

- Working data profiling for different data sources on Azure databricks.
- Working on a recommendation system for suggesting search results in a dashboard.

Research Intern

Chanakya UG Fellowship

02/2022 – 06/2022

- Created a battery arbitrage system using **RL and RNN** to develop a sustainable home energy management system.
- Used **Python, Keras, DQN**

Team- Aditya Singh, Prof T.Som(Advisor)

Data Scientist@Citrix

Summer21

- Created a geofencing **recommendation system** from the login session data of users from different products of Citrix.
- Used the concept of Unsupervised learning like **KMeans, DBSCAN** to create a Ranking and Recommendation system and got exposure to Big Data analytics in Databricks and used Hive and Spark.
- Created and deployed the geofencing recommendation system pipeline using **Azure Databricks**.
- Used **Python, SQL, Python Spark, Azure Databricks**

Mentor- Katerina Kalou

NumFocus Sponsered Intern @ SymPy

Summer19

- Developed a module(**Link to Code**) in python to solve the general type of hypergeometric ordinary differential equations(ODEs)
- Created documentation and wrote unit tests for the implemented code in Python.
- Used Python, Git, C++

EDUCATION

Bachelor and Master of Technology in Mathematics and Computing (Honours)

IIT BHU, Varanasi

2017 – 2022

CGPA: **8.59 / 10**

PROJECTS

Retinal Blood Vessels Segmentation

Created a supervised **SVM model** for classifying severity level of retinal blood vessels from Images by extracting features vector from the saliency map of images using the concept of **Locality Constrained Linear coding(LLC) and SIFT descriptor**. The concept behind this was to make the model fast and reliable for real-world use by avoiding the complex deep neural network. This was developed using **Python, Keras, and MatLab** on public data under the supervision of departmental professor Dr. Sunil Kumar.(**Code Link**)

Health Monitoring System

Created a simple UI by combining **NodeJs, Python, and (Kmeans)Unsupervised machine learning** to monitor a patient's health over time. It takes patient health data as a CSV formate and predicts the condition of patients as Normal, Mild, Sever, Urgent Medical treatment requirement. It has a feature of finding the nearest location of Hospitals/Medicine shops by checking the availability of medicine/machines/space as per your health condition from your location. (**Code Link**)

Diabetic Retinopathy Detection

Developed a **deep neural network** model using the concept of **transfer learning** by taking Inceptionv3 as a base model for finding early detection of diabetic retinopathy. This was developed using **Keras** and Python on a public dataset under the supervision of departmental professor Dr. Sunil Kumar.(**Code Link**)

SPORT CODING

Google Kick Start
Achieved a rank of 1101.

Google Code Jam
Achieved a rank 1749 and 423(In India) in round 1.

Facebook Hacker Cup
Achieved a rank 1487 and 173(in India) in round 2.

TECHNICAL SKILLS

Python • C/C++ • Java Basic

Data Science/Image Processing Stack • NodeJs

JavaScript • Docker • Basic Kubernetes

MySQL

CERTIFICATE AND AWARD

GSOC Mentor @SymPy

Kubernetes on IBM Cloud Beginner Level Certificate.

LinkedIn Skill Assessment Badge of Python, Git, Machine Learning.

Codefest Enigma CSE department.
Stood 1st in sophomore among 560 participants, a Natural Language Processing (NLP) online hackathon.

Flipkart Grid
Stood among the top 5 teams in our college and overall 19th in Flipkart Grid Level 1 machine learning challenge among 6500 teams.

RELEVANT COURSES

Computer Science
Data Structures | Algorithms | Digital Image Processing | Operating System | Digital Signal Analysis and Application | Machine Learning

Mathematics
Probability and Statistics | Mathematical Modeling and Simulation | Optimization Techniques | Numerical Analysis | Differential Equation