SAYANTIKA GHOSH

M.Tech Student at IISc Bangalore

@ sayantikaghosh98@gmail.com +91 6290777231 Kolkata, India in sayantikag98 sayantikag98

EDUCATION

Master of Technology in Smart Manufacturing

Indian Institute of Science, Bangalore

August 2019 – July 2021 CGPA: 8.4

Bachelor of Technology in Biotechnology

Heritage Institute of Technology, Kolkata

August 2015 – June 2019 DGPA: 9.68

INTERNSHIP EXPERIENCE

Summer Intern

Ace Micromatic Pvt. Ltd. (Virtual Internship)

July - August 2020

- Worked on Anomaly Detection using machine learning based prediction in industrial time series data for manufactured parts.
- Synthesized data using **python** and stored it in MongoDB database.
- Detected anomalies in the dataset with an accuracy of more than 90% and a f1 score of 0.92 with Support Vector Machine used as the classification model. This performed best among other classifiers used on the basis of f1 score.
- Achieved best performance by Agglomerative Clustering on the basis of silhouette score.
- Project GitHub Repository

CURRENT PROJECTS

Detection of chatter in turning using data learning models

- Used x-axis data from tri-axial accelerometer mounted on a Lathe machine from the data given in literature.
- Performed chatter classification task into chatter, mild chatter, and no chatter and obtained a f1 score of 0.77 and 80% of the test set were correctly classified.
- Performed chatter onset time prediction using different ensemble learning techniques and got an adjusted r squared score of 0.98 and 85% of the test set were early or just in time predictions.
- This trained model could be used for real-time chatter onset time prediction.

Pick and Drop task with Dobot arm in Unity

- Created the URDF model of the Dobot Magician Lite Robot from a CAD model in Fusion 360.
- Wrote a **C#** script to move the end-effector of the robot to the position where the desired object was located and then it was picked up when collision was detected.
- Specified the target location and the arm was translated to that position and the object was dropped over there.

PAST PROJECTS

Creation of a personal profile website

- Website Link
- Project GitHub Repository

Depression analysis using social media post

- Collected twitter data of ten years through specific keywords and compiled it into two datasets.
- Analyzed for specific linguistic markers, time and frequency of posting using Natural Language Processing techniques and then building a classification model to detect depression.
- Achieved best f1 score of 0.68 and AUROC score of 0.76 for classifying into random or depressed using Random Forest Classifier among other classifiers used.
- Project GitHub Repository

Quantifying the effectiveness of various air pollution reduction schemes in Delhi

- Analysed the effect of five different air pollution reduction schemes on pollutants like SO_2, NO_2, CO, particulate matters ($PM_{2.5}$, PM_{10}) recorded in selected stations over the span of four years.
- Achieved a R squared value of 0.9 for the prediction of the concentration of the pollutants after the scheme implementation using regression analysis on the past air concentration data.

SKILLS

- C++, Python, Machine Learning
- Data Structures and Algorithms

ACHIEVEMENTS

- Secured AIR 1 in Gate Biotechnology 2019
- 3^* at CodeChef (Rating 1664)

COURSES

- Currently pursuing the competitive programming track of Unacademy and CodeChef
- Completed the course of Mastering the coding interview: Data Structures and Algorithms

EXTRA-CURRICULAR

- Played Chess at State level