HARISH B

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Education

Amrita Vishwa Vidyapeetham University | *CGPA – 9.01 /10* **Sep. 2020 – May 2024**

Bachelor of Technology in Computer Science & Engineering (Artificial Intelligence) *Chennai, Tamil Nadu*

Relevant Coursework

- Data Structures & Algorithms
- Database Management Systems
- Applied Data Science
- Mathematics for Intelligent System
- Object Oriented Programming
- Python for Machine Learning

Research Experience

Sleep Apnea Detection **January 2021 – Present**

Source Code *Chennai, Tamil Nadu*

- Developed a service to automatically detect sleep apnea and keeping track of the Region of Interest (ROI).
- Incorporated scripts using Python to perform experiments with different testing conditions to demonstrate its accuracy efficiency in identifying sleep apnea.
- Used Gaussian Blur and Canny Edge Detection Algorithm to detect noise free edges of the body. Further, current frame is compared to the previous frame to detect body movements accurately by achieving 93% accuracy.
- Explored ways for automatically adjusting the region of interest within the frame and send a daily report of test results containing start and end time of patient movement and also time for no movement occurred to team members.

COVID-19 Mutation Rate Analysis with Long Short-Term-Memory (LSTM) **July 2021 – Present**

Source Code *Chennai, Tamil Nadu*

- Investigated the mutation rate of the entire genome sequence of the patient data with less error around 1.03% loss.
- Obtained data is then analyzed independently to detect nucleotide and codon mutations.
- Results large number of Thymine (T) and Adenine (A) nucleotides are mutated compared with others.
- Utilized Recurrent Neural Network (RNN) based LSTM model to predict the future mutation rate.

Projects

Metabolic Pathway Class Prediction | *Python* | *Source Code* | *Webapp* **November 2021 – December 2021**

- Employed a hybrid graph based deep learning model called Graph Convolutional Networks (GCN) to predict the metabolic pathway classes of the molecules.
- Extracted important shape features using RDKit directly from input SMILES representations.
- Worked for Multi-Classification of compounds into several pathway classes, which proves novelty by achieving 97% accuracy.
- Build Web Application where user enters query compound and displays predicted class results from trained GCN model.

MBTI – Indicator based Personality Type Prediction | *Python* | *Source Code* | *Webapp* **December 2021 – January 2022**

- Predicted personality of a person based on social media content achieved an accuracy of 95.53%.
- Used Myers-Briggs personality type Indicator (MBTI) to classify people's personalities under various categories.
- Built four machine learning models to compare and contrast the result from evaluation metrics.

Anthropomorphic Arm with Spherical Wrist Robot GUI | *MATLAB* | *Source Code* **January 2021 - March 2021**

- Designed a simulation on Anthropomorphic arm with Spherical Wrist in MATLAB.
- Calculated Forward and Inverse Kinematics to operate robot's shoulder, elbow and wrist joints to accomplish human qualities.

Technical Skills

Languages: Python, Java, C++, HTML/CSS, SQL, MATLAB
Developer Tools: VS Code, Eclipse, Android Studio
Technologies/Frameworks: Machine Learning, Deep Learning, Data Science, TensorFlow, PyTorch.

Leadership / Extracurricular

Srri SPK Public Senior Secondary School **2018 – 2020**

Assistant Sports Secretary *Namakkal, Tamil Nadu*

- Coordinates the activities of various students involving sports.
- Secured Rajya Puraskar Award, a highest award a Scout can earn at the State level testing by a team of qualified examiners.