RAHUL RAJ

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EDUCATION

Rajiv Gandhi Institute of Petroleum Technology **2022 − 2026**
*(An **Institute of National Importance** along the lines of **IITs**)* *Amethi, Uttar Pradesh, India*
B. Tech in Electrical Engineering (Major : E -Vehicle) - **CPI** - **7.71/10**

PROJECTS

CSI-Based Joint Activity Recognition and Location Estimation Using ML/DL **Ongoing**

- Developing a System that can accurately recognize human activities based on Wi-Fi signal Data (**CSI**).
- Developed and Implemented a **Convolutional Neural Network (CNN) model** on CSI Jordanian Dataset to recognize **12 different activities** and got more than **92% accuracy**.
- Collected **CSI (Channel State Information)** data for different activities using **ESP32 Microcontrollers** and processed it using several **Python libraries**.
- Used **TensorFlow, NumPy, Pandas, Matplotlib, OpenCV, Scikit-learn** to implement CNN and also made use of various technologies.

Real-Time Face Detection using TensorFlow and Python ⤢ **Dec, 2023**

- Developed a **Deep learning face detection model** using **TensorFlow's Functional API**, optimizing architecture for **real-time performance**, and employing a **custom loss function and optimizer for efficient learning**.
- Successfully **collected and annotated a diverse dataset using OpenCV and LabelMe** for training the model
- Successfully tested the model in **real-time detection** scenarios, achieving accurate and reliable results, showcasing its potential for deployment in practical applications.

Generated a New Image Dataset Using Generative Adversarial Network (GAN) **Nov, 2023**

- Generated new **Image dataset** for image classification from Fashion MNIST dataset using **Generative Adversarial Network (GAN)**.
- Built and Implemented **Generator, Discriminator and Training loop** on MNIST dataset to generate new dataset.

TECHNICAL SKILLS

Languages:
Python, SQL, C and C++
Libraries:
NumPy, OpenCV, Pandas, Matplotlib, Seaborn, Scikit-learn
Technologies/Frameworks:
TensorFlow, Linux, MicroPython, GitHub, WSL2, MATLAB

VOLUNTEER EXPERIENCE

Science and Technical Council, RGIPT
Tinkering Lab Executive
Organized Water Rocketo Revelio Event in URJOTSAV 2023, RGIPT
Training and Placement Cell, RGIPT
Student Member
IEEE Student Branch, RGIPT
Video Editing Head

Achievements

- JEE Advanced 2022 Qualified
- Runner-Up in Robo Soccer Event in URJOTSAV 2023(Annual Technical Fest, RGIPT)
- Runner-Up in Momentum Event in Technex 2023(Annual Technical Fest, IIT BHU)