SHUBAN M S

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GitHub   **Kaggle**   **LeetCode**

EDUCATION

Vellore Institute Of Technology,Chennai   **2021 - 2025**
Bachelor of Technology in Electronics and Computer Engineering (CGPA - 8.48)   *Chennai-TN, India*
Related Coursework: Artificial Intelligence, Machine Learning, Data Science, DSA, DBMS, Software Engineering

EXPERIENCE

CHAIR, VIT Chennai [Certificate]   **June 2024 – August 2024**
Python Developer, Data Analysis, and Machine Learning Engineer

- Developed a **medical dataset** using **IMU sensors** to analyze movement patterns and assess risks of **knee and back issues**.
- Designed end-to-end **data pipelines**, performing **data cleaning, feature engineering, and preprocessing** for robust **machine learning models**.
- Implemented **Python scripts** for automated data processing and classification, ensuring efficient **analysis and prediction** of musculoskeletal disorders.

GreenStitch   **Aug 2023 – Jan 2024**
Python Developer and Data Science Intern, On-site

- Engineered a **predictive model** for **Scope 3 emissions**, driving client engagement and providing innovative solutions for sustainability challenges.
- Developed an **advanced data tracking tool** for major retail clients, enhancing **LCA strategies** and enabling effective **carbon footprint management**.
- Architected **data-driven APIs** with **Python** and **FastAPI**, integrating **MySQL** and **PostgreSQL** for streamlined data handling, deployed on **Azure** for scalable solutions.

PROJECTS

Catalyst - Your Own Study Companion (Ongoing) | *Python | NLP | LLMs | API | PostgreSQL*   [Project]

- Engineered an **adaptive learning platform** that offers **personalized course plans** and integrates **real-time doubt resolution** via a **fine-tuned LLM model**, enhancing **user engagement** and **knowledge retention**.
- Developed a comprehensive **quiz feature** and **progress tracking system** using **Python** and **PostgreSQL**, facilitating efficient **data management** and monitoring of **user performance**.

Parking lot occupancy detection using PSAT algorithm | *Python | Keras | Azure | YOLO | Data Pipelines*   [Project]

- Designed a custom **Parking Slot Alignment Transformation (PSAT)** algorithm to correct perspective distortions caused by an angled camera monitoring the campus parking lot.
- Fine-tuned **YOLOv8** for parking slot detection, integrating the **PSAT algorithm** to accurately align and classify parking spots, achieving an **87.9% accuracy** even in a fully occupied parking lot.

Self-Driving Car Simulator | *Python | Pygame | Reinforcement Learning | OOP*   [Project]

- Developed a self-driving car simulation from scratch using **Pygame**, implementing an intelligent driving agent powered by a **Deep Q-Network (DQN)** for real-time learning and decision-making.
- Employed Object-Oriented Programming principles to design modular code, allowing dynamic track generation and enabling the car to learn and adapt to new driving environments through reinforcement learning techniques.

ACHIEVEMENTS

- Finalist in **3 National Hackathons** and **1 International Hackathon**.
- Published a paper in IEEE, receiving the **Best Paper Award** [IEEE Paper Link] [Award Certificate].
- Successfully submitted a **patent** on a **Generative AI learning system with Blockchain integration**.
- Invited to conduct a session on **Azure Fundamentals** and **Deploying Machine Learning Models on Azure**.

TECHNICAL SKILLS

Programming Languages: Python, MYSQL
Libraries and Frameworks: Scikit-learn, TensorFlow, Keras, PyTorch, Pandas, NumPy, Matplotlib, Seaborn
Data Science Tools: Azure, Jupyter Notebooks, Google Colab, Excel, Google Sheets
Collaboration Tools: Git, GitHub, JIRA, Miro
Machine Learning Specializations: Supervised Learning, Unsupervised Learning, Deep Learning, Generative AI
Soft Skills: Organized, Teamwork, Adaptability, Analytical Thinking