JOEL EBENEZER

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EDUCATION

PSG Institute of Technology and Applied Research   **2022 – 2026**
*B.Tech - Artificial Intelligence and Data Science - **CGPA** - **8.7***   *Coimbatore, Tamil Nadu*

EXPERIENCE

Intern at SAP Labs 🔗   **April 2024 - June 2024**
Role - Machine Learning Engineer   *Bangalore, India*

- Worked on a problem statement for **Vendor Comparison**, focusing on AI-driven recommendations.
- Developed a **web scraping** pipeline for data collection to enhance the recommendation system.
- Fine-tuned **Phi-3** for optimized performance in natural language understanding.
- Implemented **similarity search** using **FAISS indexing** and **vector embedding models** to compare vendors efficiently..

Intern at Sacha Engineering 🔗   **Aug 2024 - Nov 2024**
Role - Machine Learning Engineer   *Coimbatore,India*

- Worked on **predicting drag coefficients** to reduce reliance on computationally expensive **CFD simulations.**.
- Extracted vehicle measurements from CAE drawings for feature generation
- Built a machine learning pipeline using Gradient Boosting ResNet for accuracy.
- Enhanced aerodynamic analysis with a faster, data-driven alternative to CFD.

PROJECTS

AI-Powered Vendor Comparison 🔗 | Phi-3, FAISS, Web Scraping, FastAPI, JavaScript   **April 2024**

- Developed a vendor comparison system using AI-driven recommendations based on vector embeddings.
- Fine-tuned Phi-3 for natural language understanding to enhance vendor similarity analysis
- Implemented FAISS indexing to enable efficient similarity search for vendor matching
- Integrated the backend (FastAPI) with the frontend (JavaScript-based UI) to deliver real-time vendor suggestions

KidsArtPsychology 🔗 | Qwen-2, Phi-3, Fine-tuning, Image Captioning   **November 2024**

- Designed a system to analyze children's drawings and infer emotions thought patterns.
- ine-tuned Qwen-2 for detailed image captioning (objects, colors, themes).
- Trained Phi-3 on psychological case studies to analyze captions extract insights.
- Developed a pipeline where Qwen-2 generates captions, passed to Phi-3 for psychological interpretation

Pest Detection 🔗 | RAG, ResNet, Raspberry Pi   **2023**

- A real-time pest detection system using an automated field camera.
- Implemented a pipeline where the camera captures images every 4 hours and sends them to ResNet for pest identification.
- If pests are detected, the RAG model generates necessary pre-requisites and alerts the farmer.
- Integrated with hardware (Raspberry Pi) for seamless image capture and processing.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, C, OS, DBMS, CNN, SQL
Technologies/Frameworks: HTML, CSS, React, MongoDB, Express,Pytorch,Tensorflow
Developer Tools: Lightning AI, VS Code, PyCharm,Google Colab, Canva

CERTIFICATIONS

- Pytorch for Deep Learning - Udemy
- Python for data science - Nptel
- Python Full stack- Jain University

EXTRACURRICULAR

- 2nd Runner-up at TechBrew Hackathon