Aryan Mahajan

mahajanaryan0409@gmail.com | 6006772716

EXPERIENCE

IIT Jammu | Project Research Intern
Jan 2025 - Mar 2025 | Jammu, J&k, India

Developed an AI-powered event-based chatbot using Retrieval-Augmented Generation (RAG). Key contributions included:

- Data Preprocessing: Extracted and processed text from PDFs using PyPDF2 for training data preparation.
- Model Development: Implemented a RAG pipeline with FAISS vector storage, Hugging Face embeddings, and a GPT-based language model for accurate event-based responses.
- Frontend Development: Built an interactive chatbot UI using Streamlit, integrating SQLAlchemy for database management and optimizing real-time user interactions.
- Performance Optimization: Improved query processing speed and accuracy through metadata filtering and enhanced retrieval mechanisms.

Technologies Used: Python, PyPDF2, Hugging Face, FAISS, SQLAlchemy, Streamlit, LangChain

PROJECTS

Trufake
Apr 2025

https://trufake.ashishtiwari.net

- Developed a deepfake detection system using an EfficientNet-based CNN and attention-enhanced LSTM for temporal modeling, with video preprocessing via OpenCV and Dlib.
- Built backend with FastAPI for RESTful inference APIs, containerized with Docker, and deployed for real-time deepfake classification on curated datasets (DFDC, FaceForensics++).

Lunar Lander with NEAT (NeuroEvolution of Augmenting Topologies)
Sept 2024 - Oct 2024

Developed an AI-driven Lunar Lander simulation using NEAT (NeuroEvolution of Augmenting Topologies) and Pygame.

- Implemented evolutionary algorithms to train neural networks for smooth, crash-free landings.
- Enabled AI to improve over generations by learning from performance metrics.
- Tech Stack: Python, NEAT-Python, Pygame

Flappy Bird with NEAT (NeuroEvolution of Augmenting Topologies)
Aug 2024 - Sept 2024

Created an AI agent to play Flappy Bird using NEAT (NeuroEvolution of Augmenting Topologies).

- Applied genetic algorithms to evolve neural networks capable of adapting to dynamic game environments.
- Demonstrated NEAT's effectiveness in reinforcement learning tasks and game AI development.
- Tech Stack: Python, NEAT-Python, Pygame

EDUCATION

SUSHANT UNIVERSITY
BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE WITH SPECIALIZATION IN AI & ML
Expected June 2027
Current Cum. GPA: 8.94/10

SKILLS

Programming Languages: Python (DRF, FastAPI, PyTorch, TensorFlow, LangChain), Java (DSA), C, SQL
Web & Backend: Django REST Framework, FastAPI, REST APIs, HTML, CSS, React, Tailwind, Typescript, Streamlit
Databases & Tools: PostgreSQL, MySQL, SQLite, SQLAlchemy, DynamoDB
Data & ML: Pandas, NumPy, Matplotlib, Seaborn, Statistics, Data Cleaning, Data Visualization, Hugging Face, FAISS
DevOps & Cloud: Docker, AWS (EC2, S3, Glue, DynamoDB), ELT Pipelines
Computer Vision & Deep Learning: OpenCV, EfficientNet, LSTM, Deepfake Detection, RAG (Retrieval-Augmented Generation)

COURSEWORK

- Python Programming–CIIT
- Introduction to Statistics - Stanford University
- Introduction to Machine Learning – DeepLearning.AI
- Advance Learning Algorithms – DeepLearning.AI
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning – DeepLearning.AI
- Unsupervised Learning, Recommenders, Reinforcement Learning – DeepLearning.AI
- Convolutional Neural Networks in TensorFlow – DeepLearning.AI

LINKS

Github: https://github.com/AryanMahajan
LinkedIn: https://www.linkedin.com/in/aryan-mahajan-b11684258/
Webpage: https://aryanmahajan.vercel.app/