Abhinesh V

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Summary

Machine Learning Engineer with hands-on experience in ML, Deep Learning, NLP, and Computer Vision. Built real-world projects like self-driving simulations, medical image diagnosis, semantic search, and speech-enabled PDF summarizer apps. Skilled in PyTorch, TensorFlow, AWS, and end-to-end system design

Experience

Software Engineer — *Bengaluru, India*
Freelance — *Jan 2024 – present*

- Integrated speech recognition feature to allow users to ask questions orally.
- Initiated transition from frontend development to ML applications with Python-based data pipelines.

Web Developer Intern — *Bengaluru, India*
MotionCut Pvt Lmt — *Nov 2023 – Dec 2023*

- Created an e-commerce web app with real-time product updates using MongoDB and asynchronous APIs.
- Gained hands-on experience with scalable backend integration and real-time data handling.

Projects

Self-Driving Car Simulation with YOLO Object Detection (CARLA Simulator) *github*

- Built an autonomous driving system using CARLA simulator and YOLOv5 for real-time object detection.
- Deployed YOLOv5 to detect vehicles, pedestrians, and traffic signals in real-time.
- Used OpenCV and PyTorch to handle real-time video processing and model inference.

Pneumonia Detection from Chest X-rays using CNN *github*

- Developed a deep learning model to detect pneumonia from chest X-ray images with high accuracy.
- Built and trained a Convolutional Neural Network using PyTorch.
- Preprocessed and augmented image data from the NIH Chest X-ray dataset.
- Achieved over 90% validation accuracy and implemented Grad-CAM for explainability.

Semantic Search Engine using NLP and Sentence Embeddings *github*

- Implemented a semantic search system that retrieves relevant results based on meaning, not keywords.
- Used transformer-based models to convert queries and documents into embeddings.
- Built a FAISS-based similarity index for efficient nearest-neighbor retrieval.
- Supports contextual and fuzzy matching, outperforming traditional keyword search.

Technologies

Languages: Python, JavaScript, C/C++.

ML Frameworks: TensorFlow, PyTorch, scikit-learn, Keras, XGBoost, LightGBM

Tools & Libraries: NumPy, Pandas, OpenCV, Matplotlib, HuggingFace

Others: MongoDB, PostgreSQL, SQLite, Streamlit, Git, GitHub, Docker, AWS

Certifications

Deep Learning Specialization - coursera

Machine Learning Specialization - coursera

Education

East Point College of Higher Education — *BCA*

- **Coursework:** Data Structures and Algorithms, Operating Systems, DBMS, Computer Networks