SAURABH RAJPUT

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EDUCATION

Masters in Artificial Intelligence, Illinois Institute of Technology, Chicago, IL *August 2022 - May 2024*
Coursework: Machine Learning, Deep Learning, NLP, Computer Vision, and Social Network Analysis, Advanced AI.
Key Projects: Engineered a machine learning model using LSTM networks to predict disease spread, analyzing time-series data for accurate trend forecasting; Developed PyTorch-based NLP model for tweet sentiment analysis, integrating BERT for context-rich text interpretation, with 91% accuracy.

Bachelor of Computer Engineering, Jayawantrao Sawant College of Engineering, Pune, MH *August 2018 - June 2021*
Coursework: Comprehensive study of Data Structures, Computer Networks, Databases, OS, Machine Learning, etc.
Key Project: Implemented a deep learning model using TensorFlow and Python to predict traffic flow, aiming to enhance travel time estimations and resource allocation for transportation networks.

SKILLS

Languages:	Python (expert), C++, Java, MATLAB, HTML, CSS, JavaScript
AI & ML:	TensorFlow, Keras, Langchain, PyTorch, LLMs, NLP, OpenCV, Machine Learning Algorithms, Deep Learning, Computer Vision, Reinforcement Learning, Generative Models (GANs), Transformers, Neural Network Architecture, Retrieval-Augmented Generation (RAG).
Data Analysis:	Pandas, NumPy, Scikit-Learn, SQL, Data Visualization (Matplotlib, Seaborn), Big Data Analytics.
Web & Cloud:	Flask, React, AWS(Lambda, EC2, S3), GCP, Azure, Docker, Kubernetes, CI/CD Pipelines, Git, GitHub.
Soft Skills:	Communication, Collaboration, Problem-solving, Adaptability, Leadership, Project Management.

EXPERIENCE

Artificial Intelligence Engineer *December 2020 - March 2022*
Parkiez Mobility Pvt Ltd *Pune, MH*

- Enhanced parking space detection systems by 25% using Python, TensorFlow, and OpenCV. Developed and deployed the models on AWS, improving real-time accuracy and user satisfaction.
- Optimized cloud infrastructure by integrating and managing AWS services like EC2 and S3, which increased data processing speeds by 30% and enhanced overall system scalability.
- Designed and implemented AI-driven models on AWS SageMaker for predicting parking space availability, which enhanced utilization efficiency by aligning real-time data with user demand.
- Implemented and maintained a Jenkins-driven CI/CD pipeline in conjunction with AWS CodePipeline, reducing deployment times by 30% and enabling quicker product iterations and reliable software updates.

PROJECTS

GAN Realistic Face Generator: Designed and implemented a Generative Adversarial Network (GAN) in PyTorch to generate realistic human faces, using the CelebA dataset for training, and applied advanced techniques such as batch normalization and custom loss functions to enhance image quality

Meta Teacher Medical Classification: Utilized the NIH-CXR14 dataset, crafted and fine-tuned the MultiLabelCNN architecture, for multi-label medical image classification, with an accuracy of 92.76% in interpreting chest X-ray images.

AI Research Assistant: Developed an AI research assistant utilizing Llama 2 for in-depth information retrieval and analysis, leveraging Streamlit for an interactive web interface and Weaviate for vector-based data storage and search.

Traffic Prediction Model: Implemented an AI-driven model to forecast I-94 Interstate highway traffic volumes, utilizing weather, date, and time data, enhancing traffic management strategies with predictive insights.

Smart ATS (Application Tracking System): Leveraged LLM and NLP in Python and Streamlit for a resume analysis system, enhancing job match precision by 92%.

RAG Implementation: Developed a document search and query answering web application utilizing Retrieval-Augmented Generation (RAG), FastAPI for the backend, the Haystack NLP framework for efficient document processing, and Weaviate as a vector search engine, designed to extract and generate precise answers from extensive document sets.