ADITYA KUMAR SINGH

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EDUCATION

VIT-AP University **2022-2026**
B.Tech in Computer Science Engineering | 8.53/10
CBSE Class 12th Board | 79% April 2021
CBSE Class 10th Board | 94% April 2019

PROJECTS

Deepfake Detection Using EfficientNet-B0 | *Pytorch, OpenCV, Torchvision* **Feb - March 2025**

- Engineered a state-of-the-art Deepfake Detection Model with EfficientNet-B0, leveraging CNNs to precisely distinguish real and fake images.
- Optimized the model on a high-quality labeled dataset using PyTorch, achieving an impressive 90.36% accuracy and 0.9748 ROC-AUC score for robust performance.
- Enhanced interpretability with a confusion matrix, F1-score, PR curves, and Grad-CAM for performance validation.

Pedestrian Detection from Drone View | *OpenCV, TensorFlow, Pytorch* **September 2024**

- Designed an advanced computer vision model for drones to strengthen surveillance and public safety.
- Integrated deep learning techniques, including CNNs, to refine object detection and tracking accuracy.
- Implemented state-of-the-art models like YOLO and SSD, utilizing TensorFlow and PyTorch for development and training.

Movie Recommendation System | *Python, Streamlit* **Oct - November 2024**

- Built a hybrid movie recommendation system using Correlation Coefficient, Cosine Similarity, and KNN, improving recommendation accuracy.
- Developed an interactive web-based UI with Streamlit, streamlining deployment and boosting real-time user engagement.
- Leveraged Pandas, Scikit-learn, and TF-IDF Vectorizer for efficient data processing and scalable model optimization.

Neural Network for Handwritten Digit Recognition | *Numpy, Pandas* **December 2024**

- Implemented a neural network from scratch using NumPy to classify handwritten digits from the MNIST dataset, achieving high accuracy.
- Developed forward and backward propagation functions with ReLU and Softmax activation, fine-tuning parameters via gradient descent.
- Designed an evaluation pipeline with one-hot encoding, accuracy tracking, and Matplotlib-based visualization of predictions.

SKILLS

Languages - Java, Python, Swift, Javascript, HTML, CSS, R, SQL
Developer Tools and Platforms - VS Code, Google Colab, Xcode, Git, MySQL, AWS, Matlab
Framework & Libraries - Tensorflow, Pytorch, Pandas, OpenCV, Flask, Matplotlib, Streamlit, Fast API
Soft Skills - Effective Communicator, Analytical Thinker, Collaborative Team Player, Adaptable & Time-Efficient

CERTIFICATIONS & ACHIEVEMENTS

AWS Cloud Architect
Google Developers Machine Learning Course
Top 10 among 280+ projects in the Engineering Clinics Expo of VIT-AP University

RELEVANT COURSEWORK

DSA | Database Systems | Operating Systems | Computer Networks | OOPs | Software Engineering | Statistics & Probability | Linear Algebra | Discrete Maths | Calculus | Differential Equations | Data Warehousing & Mining | Data Visualisation | Machine Learning | Deep Learning | Artificial Intelligence | Computer Vision | Digital Image Processing | AWS