

Aditya Kumar Singh

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EDUCATION

VIT-AP University

B.Tech in Computer Science Engineering — 8.53/10

Aug. 2022 – Jul. 2026

PROJECTS

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

Feb. 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*

Jan. 2025

- 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

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

Dec. 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

Movie Recommendation System | *Python, Streamlit*

Oct. 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

SKILLS

Languages: Java, Python, Swift, JavaScript, C, HTML/CSS, R, MySQL

Frameworks: Pytorch, Tensorflow, Flask, Streamlit, FastAPI

Developer Tools: Git, Docker, Google Colab, VS Code, XCode, PyCharm, IntelliJ, Matlab

Libraries: pandas, NumPy, Matplotlib, OpenCV, SwiftUI

Soft Skills: Effective Communicator, Analytical Thinker, Collaborative Team Player, Adaptable and Time- Efficient

COURSEWORK

Computer Science: Object Oriented Programming, Database Management System, Computer Networks, Operating Systems, Data Structures, Design and Analysis of Algorithms, Software Engineering, Automata Theory, Amazon Web Services

Data Science - AI: Data Analysis, Data Warehousing and Mining, Data Visualization, Machine Learning, Deep Learning, Artificial Intelligence, Digital Image Processing, Computer Vision

Mathematics: Statistics and Probability, Linear Algebra, Vector Calculus, Differential Equations, Discrete Mathematics