Shirsendu Chatterjee

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Summary

Passionate AI/ML undergraduate skilled in deep learning, computer vision, and NLP with strong Python, TensorFlow, and PyTorch expertise. Experienced in building real-world AI systems, solving complex problems, and applying research efficiently. Eager to develop impactful, cutting-edge AI solutions in a fast-paced environment.

Technical Skills

Programming Languages: Python, C++, SQL

Deep Learning Frameworks: TensorFlow, PyTorch, Keras

Libraries & Tools: NumPy, Pandas, Scikit-learn, OpenCV, HuggingFace, Git, Transformers

Projects

Phishing Email Detection with BERT
Natural Language Processing — *Python, HuggingFace, PyTorch*

- Fine-tuned the DistilBERT transformer model to classify emails as phishing or safe using HuggingFace
- Preprocessed text data, applied tokenization, and trained on an 80-20 split using the Trainer API
- Evaluated using precision, recall, F1-score, and accuracy; achieved 96.88% test accuracy

Traffic Light Detection with YOLOv8
Computer Vision — *Python, Ultralytics YOLOv8, OpenCV*

- Implemented YOLOv8 object detection to detect traffic lights in real-time video frames
- Used HSV color segmentation to classify lights as Red, Yellow, or Green and trigger actions like STOP, SLOW, or GO
- Applied a sliding window approach for stable detection and annotation using OpenCV

Human Activity Recognition using LSTM
Deep Learning — *TensorFlow/Keras, Python, LSTM*

- Built LSTM model to classify six physical activities using motion sensor data
- Applied dropout and sequential modeling to enhance learning and prevent overfitting
- Achieved strong accuracy in recognizing diverse activities through temporal patterns

Bone Fracture Classification using MobileNet
Computer Vision — *TensorFlow/Keras, Python, MobileNet, Transfer Learning*

- Used pretrained MobileNet, freezing base layers and adding dense layers for classifying X-ray images into fracture types
- Applied batch normalization and dropout to reduce overfitting and improve accuracy
- Successfully distinguished between simple and comminuted fractures with effective training

Education

VIT Bhopal University, Bhopal, Madhya Pradesh — May 2027
BTech in Computer Science, Cumulative GPA: 8.55

Kendriya Vidyalaya Gomoh, Dhanbad, Jharkhand — July 2023
12th Standard (CBSE), Percentage: 84.8%

Kendriya Vidyalaya Gomoh, Dhanbad, Jharkhand — July 2021
10th Standard (CBSE), Percentage: 92%

Certifications

Deep Learning with Keras and Tensorflow (Coursera), Introduction To Machine Learning(Kaggle), Introduction To Deep Learning(Kaggle), Computer Vision(Kaggle)