Deep Radadiya

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Summary

Software Developer with expertise in AI and Machine Learning. Experienced in building scalable applications and integrating intelligent systems using Python, JavaScript, and cloud technologies. Skilled in applying ML models for real-world solutions.

Education

- **Vellore Institute of Technology** | B. Tech - Computer Science Engineering 2021 - 2025
- **Modi School- Rajkot** | Higher Secondary Education 2019 - 2021

Work Experience

FutureStack Solution | AI/ML Enginner Jan 2023 - Mar 2025

- Developed advanced machine learning solution, including a real-time computer vision system for object detection using YOLO and OpenCV, achieving 96% mAP on proprietary datasets, and a fine-tuned LLaMa-based large language model for automated customer support, boosting response accuracy by 20%.

Projects

Deepfake Detection Model | Python, PyTorch, EfficientNet, LSTM, OpenCV, TorchAttacks, Scikit-learn GitHub

- Designed and implemented an advanced deepfake detection model using a pretrained EfficientNet-B0 backbone, LSTM for temporal analysis, and attention mechanisms to identify manipulated videos with high accuracy on the FaceForensics++ dataset.Leveraged PyTorch for model development and TorchAttacks for adversarial robustness, achieving up to 30% improvement in F1-score compared to baseline CNN models on benchmark datasets.
- Optimized model for CPU execution by freezing convolutional layers and reducing batch size, achieving 50% lower memory usage while maintaining robustness through adversarial training with PGD attacks.

Ai-vision Blueprint Detector | Python, YOLOv8, OpenCV, PyTorch GitHub

- Developed an object detection pipeline tailored for construction blueprints, leveraging YOLOv8 with PyTorch for accurate detection of critical symbols (EVSE, panel, GFI) and other electrical components, achieving robust performance on real-world blueprint datasets.
- Integrated advanced image preprocessing using OpenCV (e.g., binarization, noise reduction) to handle diverse blueprint formats, enhancing detection accuracy by over 20% compared to raw input processing.

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Next Word Prediction Model | Python, PyTorch, SentencePiece, Numpy, GloVe, NLTK, SacreBLEU GitHub

- Developed an advanced next-word prediction model using a transformer decoder with pretrained GloVe embeddings, subword tokenization(Sentencepiece), and beam search decoding, achieving up to 25% improvement in top-5 accuracy on Wikitext-103 compared to baseline RNN models.
- Optimized training with mixed precision (FP16), learning rate warmup, and dynamic batching, reducing memory usage by 40% and training time by 30% on GPU, while implementing checkpointing and perplexity-based evaluation for robust performance.

Cancer Prediction | Python, OpenCV, Keras, TensorFlow GitHub

- Designed and implemented a CNN model to accurately classify benign vs. malignant skin cancer images. Preprocessed image datasets using OpenCV for resizing, normalization, and augmentation to improve model generalization.
- Achieved significant performance gains - 64% faster inference compared to traditional fully connected neural networks. Utilized Keras with TensorFlow backend to build, train, and evaluate the deep learning architecture.

Flower Detection | Python, OpenCV, Keras, and Scikit-learn. GitHub

- Developed a CNN model for flower species classification using Keras with TensorFlow backend, optimized with OpenCV preprocessing (resizing, normalization, augmentation). Achieved improved speed and accuracy over traditional fully connected networks. Utilized Scikit-learn for evaluation and visualization.

Skills

Languages: C++, Python

Web Technologies: HTML, CSS, JavaScript, Bootstrap, Express.js, Node.js, React.js, Rest API

Cloud & Database Technologies: AWS, SQL, MySQL, PostgreSQL

AI/ML Technologies & Tools: Machine learning(PyTorch, TensorFlow, Keras, Scikit-learn), Deep learning(CNNs, RNNs, LSTM, Transformers), Computer Vision(YOLO, OpenCV, EfficientNet), NLP, Numpy, Docker, Git

Certificates

Full Stack Web Development, AWS Cloud Practitioner, Excellence in C++, Excellence in DSA