SHARDUL JANASKAR

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https://github.com/ShardulJ?tab=repositories

PROFILE SUMMARY

- Hand-ons experienced in Python.
- Experienced in Implementing and Training Detection and Segmentation Algorithms in Computer Vision.
- Passionate about reading and trying to implement new research papers in Computer Vision.

EDUCATION

Masters in Computer Science, Depaul University (SEP 2023 - PRESENT)
Focus: Artificial Intelligence

Electronics and Communication, Mumbai University (AUG 2014 - JUL 2018)

WORK EXPERIENCE

Research Assistant – DePaul University (December 2024 - Present)

- Assisting in the development of an automated summarization system for mathematics lecture videos.
- Conducting literature reviews to explore existing methodologies and identify potential improvements.
- Contributing to data collection and annotation processes to build a high-quality dataset for model training.
- Implementing video processing techniques using FFmpeg to merge summarized segments into a coherent output.

Netscribes India Pvt. Ltd.: Associate Machine Learning Engineer (March 2021 - December 2022)

- Developed an end-to-end object detection pipeline on Databricks using Detectron2 with ResNet-50 FPN backbone for detecting brand placements in Twitch streams, achieving a classification accuracy of 97.3%, mean Average Precision (mAP@0.50) of 0.85, and reducing manual analysis by 80%.
- Fine-tuned RoBERTa with PyTorch for large-scale topic tagging and sentiment analysis, achieving 88% sentiment accuracy and reducing analysis time by 60%.
- Built a product matching model with TF-IDF and Random Forest Classifier for e-commerce platforms, enhancing product search accuracy by 30%. Utilized SQL and Databricks API to fetch and manage large datasets, and MongoDB for query optimization and data storage
- Engineered an ETL pipeline using Apache Airflow to integrate data from Google Analytics and Salesforce into Amazon Redshift, improving data accessibility for strategic decision-making.

Freelancer: Machine Learning Engineer (June 2019 - January 2021)

- Enhanced a modified U-Net for satellite image segmentation, boosting edge precision and overall accuracy from 79% to 86%, aiding urban planning efforts.
- Developed a YOLO detection model for document logo recognition, optimizing training speed by 30% and boosting detection precision to 83%, improving workflow efficiency. Deployed the solution on Heroku, ensuring scalability and cross-platform deployment.
- Collaborated cross-functionally with clients to refine requirements and deliver machine-learning solutions. Actively adopted an Agile methodology, ensuring iterative development and on-time delivery.

Qure.ai: Project Research Intern (November 2018 - January 2019)

- Improved X-ray fracture detection model accuracy from 43% to 66% by switching the backbone from VGG to ResNet, enabling better diagnostic performance.
- Enhanced image preprocessing pipeline by implementing techniques such as contrast adjustment, noise reduction, and edge detection, which contributed to a more reliable feature extraction process.
- Conducted data augmentation on medical images, including rotation, scaling, and flipping, to increase dataset diversity and model robustness, leading to improved model generalization on unseen data.

TECHNICAL SKILLS

- **Programming Languages**: Python, C, C++, Java
- **Machine Learning**: Computer Vision, Natural Language Processing, Data Analysis, Time-Series Analysis, Model Optimization (ONNX, TensorRT), Deployment
- **Frameworks**: PyTorch, TensorFlow, Keras, Transformers
- **Applications**: Numpy, Pandas, OpenCV, MLflow
- **Database**: SQL, MySQL, MongoDB
- **Deployment and Cloud Services**: Flask, Django, AWS, GCP, Heroku, Docker