Anirudh Iyengar Kaniyar Narayana Iyengar

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Education

MS in Robotics and Autonomous Systems - AI   **January 2023 – December 2024**
Arizona State University   Tempe, AZ

- **Relevant Coursework**: *Artificial Intelligence, Data Visualization, Intro Digital Image Processing, Image Analytics & Informatics, Applied Linear Algebra, Perception in Robotics, Modeling and Control of Robots.*

B.Tech in Computer Science and Engineering   **August 2016 – May 2020**
Dayananda Sagar University   Bengaluru, India

Technical Skills

Languages: Python, C, C++, SQL, HTML, MATLAB, Bash, R, CSS, Javascript, D3 js.
Frameworks: PyTorch, Docker, Kubernetes, Git, SciPy, PySpark, Scikit-Learn, OpenCV, mmdetection, NumPy, TensorFlow, Huggingfaces, mmsegmentation, VScode, Jupiter, Detectron2, Pandas, Open AI API.
Tools/Platforms: CVAT, Tableau, ClearML, NLTK, Jira, Jenkins, AWS Quick Sight, MySQL, AWS Sagemaker, AWS S3, SQLAlchemy, SQL server management studio, VScode, Jupyter, Git.

Experience

Machine Learning Engineer Intern - Machine Learning   **June 2024 - Present**
Synapse Labs Inc.   Scottsdale, AZ

- Model an **AI reconciliation system** that reduced manual time by 50%; implemented **feature engineering, blocking, OCR, and AI entity resolution with LLM embeddings** to match **2 million records** in real-time; deploy using **AWS (S3, Lambda)**.
- Achieve an **80% improvement** in the rule-based system **transfer learning an LLM model to classify matching records**; design **AWS QuickSight dashboards** to integrate ML-driven insights into payment workflows for quicker resolutions

Research Aide and Teaching Assistant - Deep Learning   **July 2023 - July 2024**
ASU College of Health Solutions, JLiang Lab   Phoenix, AZ

- Collaborated with **Valleywise Health** on pioneering multi-task and multi-modal learning for 2D zero-shot learning, localization, segmentation, long-tail classification, and regression with the **mmdetection** and **Detectron2** frameworks.
- Applied transfer learning, contrastive learning, SSL pre-training approach to achieve 9th position in the Long-Tail Classification challenge.

Student Trainee - Computer Vision   **January 2020 – May 2020**
Centre for Artificial Intelligence and Robotics, DRDO   Bengaluru, India

- Processed a total of 389 image pairs, including 194 training and 195 test image pairs of **stereo image datasets.**
- Appraised **GWC-Net a generative adversarial network(GAN)** for depth estimation on multiple datasets.
- Demonstrated the effectiveness of GWC-Net by improving the **5% accuracy of real-time depth estimation**.

Projects

Sentiment Analysis Assisted Time Series Stock Prediction | *LSTM, Classic Time-Series Models, LLMs*   **Present**

- Hypothesized and currently developing a cutting-edge stock prediction model leveraging NLP algorithms; **anticipated to increase reliability of financial analysis by at least 40% through real-time news data analysis.**

Integration of RAG with Open Source LLM and LangChain | *RAG, LLMs, Qdrant, LangChain*   **April 2024**

- Accelerated data preparation by cleaning, Standardizing 50 DL papers, and producing accurate text files for LLMs.
- Enhanced source accuracy by 2% using **Qdrant**, **BGE-large-en-v1** embeddings, and **LangChain** with **LLM (BERT)** in an optimized pipeline for seamless **text generation in Q&A and research summaries.**

Detection For Autonomous Driving using Argoversehd | *Python, PyTorch, ClearML*   **June 2023**

- Optimized object detection for autonomous driving using the Argoversehd traffic dataset and visualized with **ClearML**.
- Fine-tuned **YOLOv8** for multiple objects, achieving **1.5%** higher mAP than the original implementation.

Anytime Stereo Image Depth Estimation using KITTI2012 | *PyTorch, OpenCV, Raytune*   **April 2023**

- Engineered a Unet model with a disparity network and residual map, improving performance by aggregating **2 decoders**. Predicted disparity images in real-time, achieving **5% better performance** than the original implementation.