Anurag Hruday Pirangi

(716)-390-0406 | anuraghr@buffalo.edu | linkedin.com/in/anuraghruday | github.com/anuraghruday

WORK EXPERIENCE

Drishte A.I **Hyderabad, India**

Machine Learning Engineer *Jun 2019 - Jun 2023*

- Developed and deployed advanced machine learning and computer vision models, optimized real-time analytics pipelines, and implemented edge AI solutions for Drishte's outdoor advertising network.
- Researched, developed, and deployed advanced machine learning models (YOLO, Mask R-CNN), improving system scalability by 30% and achieving a 0.87 F1 score for real-time audience analysis using TensorRT optimizations.
- Designed and optimized crowd analytics pipelines by 25%, extracting demographic and behavioral metrics through object tracking, OpenPose pose estimation, and person re-identification, then integrated models on Jetson Nano (TensorFlow Lite, ONNX), achieving 30 FPS low-latency with CUDA acceleration.
- Developed CI/CD pipelines with AWS and Git, automating data management with Flask and FastAPI in Docker, reducing API response time by 15%

National Institute of Technology **Warangal, India**

Research Intern *May 2018 - Jul 2018*

- Implemented speech feature extraction (MFCC, LPC) and optimized algorithms, boosting wideband quality by 40%.
- Developed advanced DSP techniques for speech bandwidth extension research work, enhancing clarity by 35%.
- Validated speech enhancement models with a team of researchers, achieving 95% accuracy across several metrics.
- Leveraged DSP techniques on the TIMIT database in MATLAB, increasing the bandwidth extension results by 20%.

PROJECTS

Academic Projects & Research **Buffalo, New York**

GenAI Text-to-Image: Latent Diffusion Models *Jan 2024 - May 2024*

- Developed and optimized a Latent Diffusion Model (LDM) from scratch using BERT for text encoding and CNNs for high-resolution image synthesis, increasing generation speed by 30% and improving image clarity by 25%.

Intelligent Traffic Signal Control using Deep RL *Jan 2024 - May 2024*

- Optimized traffic signal control in SUMO simulation using Deep Reinforcement, reducing vehicle wait times by 25%.

Autonomous Navigation using LiDAR *Aug 2023 - Dec 2023*

- Developed an autonomous navigation system using SLAM for LiDAR-based localization, integrating Visual Odometry, Sensor fusion and calibration, Particle filters, and RRT path planning, achieving 92% localization accuracy.

SKILLS

Languages & Databases: Python, CUDA, C, C++, JavaScript, MATLAB, SQL, NoSQL, PostgreSQL

Frameworks & Libraries: TF, PyTorch, OpenCV, TensorRT, YOLO, AWS, Git, FastAPI, Flask, GCP

ML & AI: Latent Diffusion Models, Natural Language Processing, Transformers, LLM fine-tuning, Gen AI, RAG

Robotics: ROS, ROS2, CUDA, AMCL, SLAM (Hector SLAM, RRT, A*), Gazebo, Arduino, LiteRT

EDUCATION

University at Buffalo **Buffalo, New York**

Master of Science, Robotics, GPA: 3.6

Indian Institute of Information Technology **Guwahati, Assam**

Bachelor of Technology, Electronics and Communication Engineering, GPA: 3.5

CERTIFICATIONS

Neural Networks & Deep Learning by DeepLearning.ai, Artificial Neural Networks by GUVI and IIT Madras