Krishna Kireeti Kuppa

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EDUCATION

National Institute of Technology Andhra Pradesh — India
Bachelor of Technology in Computer Science and Engineering - CGPA: 9.29 — *Expected Graduation- May 2026*

COURSEWORK

- Artificial intelligence
- Natural Language Processing
- Probability
- Analysis of Algorithms
- Applied Machine Learning
- Statistics

EXPERIENCE

AI Intern — May 2025 - July 2025
Asta Health Tech — *Hyderabad, India*

- Developed YOLOv12 Seg and RT-DETR architectures and conducted several experiments to analyze performance on multi-task computer vision objective.
- Optimized model performance through multiple experimentation, achieving real-time end to end inference with mAP scores of 95% for segmentation and 85% for object detection, benchmarking across ONNX and OpenVINO deployment formats.
- Built a microservices-based inference pipeline with distributed model and API servers, using RabbitMQ and Celery for asynchronous message processing, parallel model execution, and PostgreSQL/S3 integration for data storage.

PROJECTS

Molecule Generation using Graph Networks | *Python, Pytorch, PyG, RdKit, WandB* — May 2024 - July 2024
- Developed a state-of-the-art Variational Autoencoder (VAE) for molecular generation using PyTorch and PyTorch Geometric, implementing a two-step decoder architecture to enhance control over the generation process.
- Created custom GraphEncoder and GraphDecoder modules utilizing Graph Attention Networks (GAT) to effectively process and generate graph-structured molecular data.
- Implemented machine learning techniques including reparameterization, variational inference, and custom loss functions, while leveraging Weights and Biases (wandb) for experiment tracking, model performance visualization.

Text to Image generation with multi model analysis | *Python, Pytorch, Flask* — Sept 2024 - Oct 2024
- Implemented a production-ready pipeline integrating multiple state-of-the-art AI models (Stable Diffusion, CLIP, SAM) through RESTful APIs, enabling seamless text-to-image generation and automated visual analysis.
- Designed and developed a scalable Flask-based API architecture with dedicated endpoints for image generation and analysis, implementing proper error handling, request validation, and structured JSON responses for robust production deployment.
- Engineered an efficient model serving system that manages multiple deep learning models in memory, optimizing resource utilization while maintaining fast response times for both generation and analysis tasks.

Image Colorization using Pix2Pix GAN | *Python, Tensorflow, Numpy, OpenCV* — Oct 2023 - Nov 2023
- Implemented Pix2Pix GAN architecture, involving a UNet-based generator and PatchGAN discriminator, to perform image colorization from grayscale inputs.
- Modified and preprocessed a diverse dataset for training, ensuring better learning and realistic colorization of grayscale images.
- Used the tensorflow checkpoints to log training steps and generate images periodically to better monitor the model's performance through the training.

TECHNICAL SKILLS

Programming Languages: Python, Java, C, SQL
Frameworks and Libraries: PyTorch, TensorFlow, Keras, HuggingFace, Scikit-learn, ONNX, boto3, psycopg2, Weights and Biases
Technologies: Deep Learning, Computer Vision, Neural Networks, API Development, Git, Linux, Docker, Bash, Jupyter Notebook
Languages: English, Telugu, Hindi