# RAGHURAM CAULIGI SRINIVAS

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## EDUCATION

**New York University**                                                                                     **New York, USA**
M.S. Electrical Engineering                                                                                          **2025**
Coursework: Deep Learning, Reinforcement Learning , NLP with Representation Learning

**Birla Institute of Technology and Science (BITS), Pilani**                               **Hyderabad, India**
B.E. Electrical and Electronics Engineering                                                                         **2023**
Minor in Robotics and Automation

## SKILLS/TOOLS

**Programming**: Python, C/C++, CUDA, MATLAB, Bash
**Libraries**: PyTorch, OpenCV, Open3D, Tensorflow, Keras, TensorRT
**Tools and Platforms**: Git, Docker, COLMAP, Solidworks, Google Cloud, ROS, PX4

## WORK EXPERIENCE

**Software Engineering Intern**                                                                               **Remote**
**Scoutos Inc**                                                                                             June-Aug, 2024
- Developed and deployed LLM evaluation systems on Google Cloud using FastAPI and Docker, experimenting with diverse embeddings, chunking strategies, and encoder models to optimize NLP tasks.
- Designed custom evaluation pipelines and integrated metrics (e.g., BLEU, ROUGE) to assess model accuracy and performance.
- Utilized Pydantic for data validation, reducing computational costs, and deployed scalable infrastructure for parallel model evaluation.

**Graduate Research Assistant**                                                                           **New York**
**Agile Robotics and Perception Lab (ARPL), NYU**                                           Nov, 2023 - Present
- Assisted PhD researchers with in-house quadrotor platforms, testing autonomous systems.
- Tuned PX4 flight controller gains to enhance autonomous flight performance in dynamic conditions.
- Integrated and calibrated Realsense cameras and fused GPS data with OpenVINS and EKF for precise outdoor navigation.

**Software Engineering Intern**                                                                     **Bengaluru, India**
**RBCCPS, Stoch Lab at IISc**                                                                       June-Aug, 2022
- Developed a multi-view stereo pipeline using COLMAP to create 3D point clouds for mapping.
- Implemented visual-inertial navigation using camera and inertial data for drone localization.
- Integrated drone imagery with point cloud data to maintain updated field maps during crop growth cycles.
- Optimized stereo processing for faster computation of large datasets in agricultural fields.

**Software Engineering Intern**                                                                     **Hyderabad, India**
**Ayurythm**                                                                                                Aug-Dec, 2021
- Calibrated smartphone cameras to improve the signal processing accuracy for real-time user feedback.
- Integrated camera improvements into an app with 500k+ downloads, enhancing functionality and user satisfaction.
- Built and optimized image processing pipelines for enhanced health metrics measurement using mobile cameras.

## PROJECTS

**KITTI Dataset 3D Point Cloud Processing and Visualization**
Python, OpenCV, PyTorch                                                                              *April-May 2024*
- Developed a Python-based pipeline for processing and visualizing 3D point cloud data from the KITTI dataset.
- Handled various data formats, including Velodyne point clouds, camera images, and calibration files.
- Designed tools for projecting 3D point clouds onto 2D image planes for enhanced visualization.

**Dual Decoder Based Image Colorization**                                                             **GitHub**
Python, OpenCV, PyTorch
- Recreated results of DDColor model and trained it on Tiny ImageNet and WikiArt datasets.
- Achieved high-fidelity restoration of black and white images.

**MR Image Reconstruction Using Deep Learning**                                                       **GitHub**
Python, OpenCV, PyTorch
- Evaluated model-based and UNet-based approaches, improving PSNR by 5dB in MR image reconstruction.