# Nithin Kumar Sathish

nithinksath@gmail.com | 4128196387| linkedIn/nithinkumar96

## EDUCATION

**Carnegie Mellon University** Pittsburgh, PA | May 2020
MS Electrical and Computer Engineering

**PSG College of Technology** Coimbatore, India | May 2018
BE Electrical and Electronics Engineering

## WORK EXPERIENCE

**MAGIC LEAP** | Computer Vision Engineer Sunnyvale, CA | Nov 2020 – Present

- Working on a method to get real-time, zero-shot point cloud initialization to run Gaussian Splatting without SFM.
- Automated the 2D semantic mask generation using a vision-transformer like SAM and NeRF improving turnaround time from months to minutes saving thousands of hours.
- Led the data engineering effort for the deep-learning based 6 DOF object pose estimation/tracking and automated the end-to-end pipeline, optimizing for productivity.
- Worked on the 3d scene understanding feature using an EfficientDet model and improved the performance by 5 % by implementing focal loss, RandAug, and improved development time by integrating W & B with our pipeline.
- Improved the point-cloud registration accuracy to 92 % by using the latest techniques for both global and local registration.
- Developed a real-time, online object reconstruction with 30 FPS for the scanning app.

**CARNEGIE MELLON UNIVERSITY** | Graduate Research Assistant (RA) Pittsburgh, PA | Jan 2020 - Nov 2020

- Analyzed the performance, cost, and power trade-offs of object detectors from MMDetection, such as Mask R-CNN, RetinaNet, and YOLOv3, for image understanding tasks. Optimized these models using quantization techniques like FP16 and TensorRT to reduce latency while maintaining accuracy on multi-node multi-gpu clusters.
- Improved the latency of the state-of-the-art object detectors by 70 % without a drop in the accuracy.

**INTEL CORPORATION** | Data Science Intern Bangalore, India | May 2019 – Aug 2019

- Achieved 96% accuracy in classifying display artifacts in an image and track them across video frames.

**CARNEGIE MELLON UNIVERSITY** | Graduate Research Scholar Pittsburgh, PA | Jan 2018 - Dec 2018

- Implemented a parking lane detector for an R/C semi-truck and calibrated the global shutter camera to reduce the distortions
- Led the development of the real time object detection system on top of a ROS framework.

## PROJECTS

### SEMANTIC SEGMENTATION FOR AUTONOMOUS DRIVING

- Trained and tested a Semantic Segmentation model in Python and was able to improve the baseline IOU with better semantic features using bi-lateral connections.

### MONOCULAR DEPTH ESTIMATION

- Evaluated the SOTA monocular depth estimation methods, automated the scale estimation, and improved the accuracy of the pipeline by 10 %.

## SKILLS

**Languages:** Python, C++, C, Matlab
**Technology:** Jax, SLURM, Kubernetes, PyTorch, OpenCV, Open3D, Git, Docker, OpenAI API, Claude Code, Cursor, VSCode Copilot