Sandeep N Menon

LinkedIn | +1 347-951-5417 | sandeepnmenon.github.io | snm6477@nyu.edu | Github

Experience

Deep Learning Intern | **Kodiak Robotics** | **Mountain View, California** **May – Sept 2023**

- Collaborated with the perception team to develop deep learning models for autonomous trucking applications
- Engineered a multi-modal deep learning architecture integrating Camera, Lidar, and Radar sensory data for ground height, lane, and obstacle estimation.

Deep Learning Research Engineer | **Deepen AI** | **Hyderabad, India** **Sept 2020 – Jul 2022**

- Developed a 3D PointNet model for temporal smoothing of segmentation predictions over point cloud sequences, achieving a 20% mIoU improvement.
- Built a Sparse Point-Voxel CNN model for semantic segmentation of 3D point cloud sequences, boosting data annotation speed by 30% and obtaining a 76% mIoU score.
- Implemented object-aware anchor-free tracking for 2D visual object tracking
- Devised a targetless Camera-IMU and stereo camera calibration algorithm, reducing calibration time by 90% and achieving a 1-degree error margin.
- Created an on-demand GPU Virtual Machine allocation system saving up to 4000 USD/month for the company

Software Development Engineer II | **Microsoft** | **Hyderabad, India** **Jun 2018 – Sept 2020**

- Co-authored new Machine Learning method inspired by Random Forests to identify similar won deals and opportunities for sales executives in Relationship Analytics in Dynamics 365; **received patent award**
- Shipped Dynamics 365 sales insights connector in Power platforms managing 9 million monthly requests

Projects

Federated Training System for Generative Adversarial Networks | *PyTorch, Flower* **Oct - Dec 2022**

- Designed a federated learning system to train Generative Adversarial Networks. GAN can be trained across dozens of devices without sharing their data

Point Cloud Oversegmentation using Superpoint Graphs | *PyTorch, Boost* **May - Jun 2021**

- Adapted Superpoint Graph implementation to Argoverse point cloud dataset to achieve over-segmentation results of overall accuracy of 96% and Boundary Recall of 92%

Graphic Novels from Wikipedia Articles | *LangChain, StableDiffusion, React* **Mar 2023**

- Created a website where users can make graphic novels explaining Wikipedia articles. Used Large Language Models (LLMs) in conjunction with StableDiffusion to generate the narrative and images.

Asymmetric 3D Convolutions in Torchsparse | *PyTorch* **Feb 2021**

- Contributed Asymmetric 3D Convolutions implementation to TorchSparse library, managed by MIT HAN Lab

Removing noise from Optical Coherence Tomography (OCT) Images **[CVIP 2020]** **Aug 2017 - May 2018**

- Achieved Structural Similarity Index (SSIM) value of 96.7% for low noise images and 91.2% for high noise images, surpassing the state-of-the-art results at the time of publishing

Education

New York University (NYU) Courant Institute of Mathematical Sciences **2022 – 2024**
Master of Science in Computer Science New York, USA

National Institute of Technology Karnataka, Surathkal, India (NITK) **2014 – 2018**
Bachelor of Technology in Computer Science Karnataka, India

Technical Skills

Deep Learning (PyTorch, TensorFlow, Keras, MMDet, PointNet, CNN, VAE, GAN),
Convex Optimization (CVXPY), **Computer Vision** (LiDAR, SLAM, Multi-Sensor Calibration and Fusion),
Languages/Platforms: C++, C#, Python, Go, JavaScript, TypeScript, OCamL, React, Redux, Django, LangChain, Flower, Bazel, Docker, Azure, ROS, Google Cloud, MongoDB, RocksDB, MySQL, Git