Sandeep N Menon

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Education

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

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

- President of Web Enthusiasts Club NITK. Organized mock interviews, CTFs, and Linux installation drives.
- Core executive member at IEEE NITK Student Chapter. Conducted hackathons and programming contests.

Industry Experience

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

- Developed 3D PointNet model that performs temporal smoothing of segmentation predictions over point cloud sequences, improving mean Intersection over Union (mIoU) by 20%.
- Built Sparse Point-Voxel CNN model for semantic segmentation of 3D point cloud sequences. Improved data annotation speed by 30% and achieved 76% mIoU score.
- Implemented object-aware anchor-free tracking for 2D visual object tracking and VPGNet model for lane segmentation and classification.
- Devised algorithm for targetless Camera-IMU and stereo camera calibration.

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

- Co-authored new Machine Learning method to identify similar won deals in CRM context for Relationship Analytics in Dynamics 365, received patent award on the same.
- Developed GDPR query handling service for email insights infrastructure that handles up to 1 million daily service requests.
- Shipped Dynamics 365 sales insights connector in Microsoft Flows that manages more than 9 million monthly service requests.

Selected Publications and Projects

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

- **Sandeep N Menon**, VB Vineeth Reddy, A Yeshwanth, BN Anoop, and Jeny Rajan. A novel deep learning approach for the removal of speckle noise from optical coherence tomography images using gated convolution–deconvolution structure. In *Proceedings of 3rd International Conference on Computer Vision and Image Processing*, pages 115–126. Springer, Singapore, 2020

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%.

Online calibration of Surround-view Camera system | *OpenCV, Sophus, Boost* **Apr - May 2021**

- Online calibration of the four surround-view camera systems by minimizing photometric loss in the overlapping regions of the bird-eye view. Calibration is possible with just one snapshot from the four cameras.

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

- Contributed Asymmetric 3D Convolutions implementation for the open source repository TorchSparse

Virtual Gym Trainer | *PyTorch, Azure, OpenCV, Pose Estimation* | Demo link **May - Jun 2019**

- Platform for guiding users through trainer-specified exercises using automatic audio and visual cues.

Technical Skills

Strengths: Deep Learning (PyTorch, TensorFlow, Keras), Cloud Computing (Azure, Google Cloud Platform)
Languages/Platforms: C++, C#, Python, Go, React, Docker, MongoDB, RocksDB, MySQL, Cosmos DB