






SANDEEP N MENON

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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% against manual annotation; achieved 76% mIoU score
- Implemented object-aware anchor-free tracking for 2D visual object tracking
- Devised algorithm for targetless Camera-IMU and [stereo camera calibration](#). Reduced calibration time by 90% from 45 minutes to 10 seconds. Achieved 1 degree error compared to target-based approaches
- 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**
- Developed GDPR query handling service for email insights infrastructure that handles 1 million daily requests
- Shipped [Dynamics 365 sales insights connector](#) to all Microsoft Power platforms that manage more than 9 million monthly service requests

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. In *Proceedings of 3rd International Conference on Computer Vision and Image Processing*, pages 115–126. Springer, Singapore, 2020
- 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

[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%

[Asymmetric 3D Convolutions in Torchsparse](#) | *PyTorch* Feb 2021

- Contributed Asymmetric 3D Convolutions implementation to [TorchSparse](#) library, managed by MIT HAN Lab

[Virtual Gym Trainer](#) | *PyTorch, Azure, OpenCV, Pose Estimation, PoseNet* | [Demo link](#) May - Jun 2019

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

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, Flower, Docker, Azure, Google Cloud, MongoDB, RocksDB, MySQL, Git