NAVODIT CHANDRA

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EDUCATION

Carnegie Mellon University, College of Engineering — Pittsburgh, USA
Master of Science | Specialization in AI and Robotics | GPA: 3.97/4.00 — Dec 2022

Indian Institute of Technology Kanpur — Kanpur, India
B.Tech. in Mechanical Engineering | Minor in Electrical Engineering | GPA: 9.1/10.0 — May 2021

WORK EXPERIENCE

Qualcomm — Hyderabad, India
Senior Machine Learning and Computer Vision Systems Engineer — Dec 2025 – Present
Machine Learning and Computer Vision Systems Engineer — June 2023 – Nov 2025

- Developed a classical computer vision-based shallow depth-of-field rendering algorithm for all-in-focus video streams, for integration in **camera pipeline** and **deployment** on **value-tier chipsets**
- Developed a **lightweight** CNN architecture for **single-image depth estimation**, meeting **real-time 30 FPS on-device performance constraints**
- **Optimized** deep learning models via **mixed-precision quantization, balancing latency** and **accuracy** for commercial deployment on **premium-tier chipsets**

SKILLS

Programming Languages: *Proficient*: Python, C++, *Familiar*: SQL, HTML
Libraries: PyTorch, OpenCV, Gym, NumPy, Pandas, Matplotlib, Scikit-learn
Software and Tools: Linux (Ubuntu), Git, MATLAB, MAPLE, Arduino

RESEARCH EXPERIENCE

Carnegie Mellon University — Pittsburgh, USA
Graduate Researcher, Mechanical and Artificial Intelligence Lab — May 2022 - Dec 2022

- Refined **image** and **point cloud** feature maps processed by ResNet neural network architecture by introducing **Convolutional Block Attention Module**
- Improved **Driving Score** evaluation metric by **9.5%** by implementing **Additive Attention** for computation of alignment scores in **transformer block** used to combine intermediate image and LiDAR feature maps
- Experimented model performance in simulation by replacing **Self-Attention module** with **Cross-Attention module**

PROJECTS

End to End Learning for Self-Driving Cars — Feb 2022 - Apr 2022

- Predicted **steering angle** of a self-driving car from images captured by it by developing an **end-to-end** learning pipeline
- Accomplished reasonably good performance on training and testing tracks by executing **CNN** and **CNN-LSTM** neural network topologies in a team of 2

Identification of Abnormal Breasts as Potential Cancers using Machine Learning — Oct 2021 - Dec 2021

- Applied **feature engineering** leveraging **shallow machine learning** classification algorithms in a joint effort with 2 colleagues to estimate **minimum** number of features to predict whether tumors were malignant or benign

Seven Segment Digit Recognition using Computer Vision — Mar 2022 - Apr 2022

- Collaborated with 2 colleagues and developed an **algorithm** to take readings from devices using seven-segment display
- Enhanced **accuracy** by **7.8%** and **speeded up** process of taking readings by **10.4 times** in comparison to average computer typists by utilizing **image processing** operations and **computer vision techniques**

Depth Estimation leveraging Stereo Vision and Generation of 3D Point Cloud — Mar 2022 - Apr 2022

- Found **depth** of pixels from **disparity map** produced by pair of **parallel stereo** images to compute **distance** of objects
- Generated a **3D point cloud** for visualization and verification of correctness of **scaling ratio** used to find depth

COURSEWORK

Machine Learning and Artificial Intelligence, Deep Learning, Computer Vision, Trustworthy AI Autonomy, Natural Language Processing, Data Structures and Algorithms, Fundamentals of Computing

PATENTS

- US 19/225,642 Content-Aware Image Filtering Operations: **Navodit Chandra**, Gururaj Bhat, Ashish Medewar, Mayukh Roy. Filed on 02-Jun-2025
- US 18/922,132 Kernel Based Blurring: **Navodit Chandra**, Gururaj Bhat, Ashish Medewar. Filed on 21-Oct-2024
- US 18/783,248 Image Processing Using Kernels: **Navodit Chandra**, Gururaj Bhat, Ashish Medewar. Filed on 24-Jul-2024

AWARDS AND HONORS

- Impact Award: Recognized for purposeful innovation at Qualcomm — Sept 2024
- Qualcomm Distinguished Solution Recognition: For exemplary innovative solutions to important problems — Jan 2025