Chinmay Talegaonkar

EDUCATION

UNIVERSITY OF CALIFORNIA SAN DIEGO
Ph.D. in ECE | 2022 - Present
GPA: 4.0 / 4.0
Advisor: Prof. Nicholas Antipa
3D vision, Graphics & Imaging

UNIVERSITY OF CALIFORNIA LOS ANGELES
MS in ECE | 2019-2021
GPA: 4.0 / 4.0
Advisor: Prof. Achuta Kadambi

IIT BOMBAY
B.TECH. in EE | 2015-2019
GPA: 9.07 / 10.0
Minor in Computer Science

TECHNICAL SKILLS

Programming Languages:
C & C++, CUDA, Bash, Python, MATLAB
Frameworks:
Pytorch, OpenCV, scikit-learn, numpy, scipy, pandas, blender, mitsuba3, Slang.D
Development Tools:
Github, Jenkins, Google Cloud, Docker

RELEVANT COURSES

Linear Algebra, Stochastic Processes, Optimization, Computer Graphics, Computer Vision, Robotics, 3D Deep Learning, Reinforcement Learning Data Structures and Algorithms Operating Systems

AWARDS AND HONORS

- UCSD ECE Dept Fellowship 2022
- GuruKrupa Fellowship 2020
Fellowship for UCLA student researchers

CONTACT DETAILS

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Github:// **chinmay0301**, **chinmay0301ucsd**

EXPERIENCE

QUALCOMM AI | 3D computer vision research intern
June 2023 - September 2023 | San Diego, CA
- Invented a fast and memory efficient 3D scene representation for human modeling, with 10x and 100x reduction in memory usage and training time.
- Engineered an end to end pipeline to estimate SMPL mesh, and segmentation masks from human videos. *Patent Pending*

INTRINSIC.AI | senior deep learning engineer
May 2022 - Sept 2022 | Mountain View, CA
- Led the development of a novel HDR fusion algorithm, resulting in higher pose estimation accuracy for difficult lighting scenarios.

AKASHA IMAGING | senior deep learning engineer
May 2021 - May 2022 | Palo Alto, CA
Akasha Imaging was **acquired by Intrinsic.ai, an Alphabet Company** in May 2022
- Developed an E2E deep learning based multi-view pose estimation pipeline for automotive customers, with a reliability of > 99% and sub millimeter accuracy. This led to the company's first product order
- Developed a synthetic data generation pipeline to generate training data.
- Contributed to developing tools for ML Ops, CI/CD testing, pose evaluation frameworks and data collection setups.

NVIDIA | deep learning software intern
June 2020 - Sept 2020 | Santa Clara, CA
- Optimized CUDA kernels for backpropagation in 2D and 3D convolution layers in popular CNN architectures resulting in 30% speedup.
- Implemented a linearized thread launching algorithm resulting in over 30% speedup for backpropagation in 3D convolutions with low channel counts.
- Enabled complex valued convolution kernels in *CUTLASS* achieving more than 90% compute resource utilization.

NVIDIA | ai/ml compute devtech intern
May 2018 - July 2018 | Bangalore, India
- Developed CUDA kernels for optimizing routing layer and back-propagation in capsule networks resulting in a 2x speedup
- Parallelized end-to-end implementation of *DBscan* using *CUTLASS* and *thrust* libraries for **NVIDIA Rapids** platform

RESEARCH PROJECTS

Exact Volume Rendering of 3D Gaussians
Sept 2023 – Ongoing | Guide: Prof. Ravi Ramamoorthi
- Developed a method for fast and exact volume rendering of 3D Gaussians.
- Exploring potential applications in Computed Tomography.

Defocus Blur Rendering with 3d Gaussian Splatting
Sept 2023 – Ongoing | Guide: Prof. Ravi Ramamoorthi
- Devised an approach to render 3D Gaussians with defocus blur.
- Demonstrated applications in novel view synthesis from blurry images.

Monocular Depth Diffusion Models with Defocus Cues
Jan 2024 – Ongoing | Guide: Prof. Nicholas Antipa
- Developed a test-time optimization method that leverages lens blur to remove depth ambiguities in monocular depth diffusion models, while also enabling metric depth estimation.