

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

Development Tools:

Github, Jenkins, Google Cloud, Docker

RELEVANT COURSES

Deep Learning for 3D Data

Computer Graphics

Robotics

Matrix Analysis

Stochastic Processes

ML Accelerators

Optimization Techniques

Reinforcement Learning

Probability and Random Processes

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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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 from 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 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

DEFOCUS BLUR RENDERING WITH 3D GAUSSIAN SPLATTING

Sept 2023 - Ongoing | Guide: Prof. Nick Antipa

- Devised an approach to render 3D Gaussians with defocus blur.
- Demonstrated applications in novel view synthesis from blurry images.

PUBLICATIONS

- [1] P. Chari, C. Talegaonkar, Y. Ba, and A. Kadambi. Visual physics: Discovering physical laws from videos. *CVPR Tutorial*, 2020.
- [2] C. Talegaonkar, P. Khirwadkar, and A. Rajwade. Compressive phase retrieval under poisson noise. *ICIP*, 2019.
- [3] C. Talegaonkar and A. Rajwade. Performance bounds for tractable poisson denoisers with principled parameter tuning. *GlobalSIP*, 2018.