Chinmay Talegaonkar

Website | ctalegaonkar@ucsd.edu | LinkedIn | GitHub | Google Scholar

Education

University of California, San Diego — San Diego, CA
Ph.D. in Electrical and Computer Engineering — *Sept 2022 – Present*
Advisor: Prof. Nicholas Antipa — GPA: 4.0/4.0

University of California, Los Angeles — Los Angeles, CA
M.S. in Electrical and Computer Engineering — *2019 – 2021*
Advisor: Prof. Achuta Kadambi — GPA: 4.0/4.0

Indian Institute of Technology, Bombay — Mumbai, India
B.Tech. in Electrical Engineering — *2015 – 2019*
Minor in Computer Science — GPA: 9.07/10.0
Advisor: Prof. Ajit Rajwade

Selected Publications

Single-Shot HDR via a Video Diffusion Prior
Chinmay Talegaonkar, Jinshi He, Christopher McKenna, Nicholas Antipa
arXiv Preprint.

Repurposing Marigold for Zero-Shot Metric Depth Estimation via Defocus Blur Cues
Chinmay Talegaonkar, Nikhil G. Suresh, Zachary Novack, Yash Belhe, Priyanka Nagasamudra, Nicholas Antipa
NeurIPS, 2025 *(Spotlight)*. Paper.

Volumetrically Consistent 3D Gaussian Rasterization
Chinmay Talegaonkar, Yash Belhe, Ravi Ramamoorthi, Nicholas Antipa
CVPR, 2025 *(Spotlight)*. Paper Code

RnGCam: High-speed video from rolling and global shutter measurements
Kevin Tandi, Xiang Dai, ***Chinmay Talegaonkar***, Gal Mishne, Nicholas Antipa
ICCV, 2025. Paper

Pose Estimation of Buried Deep-Sea Objects using 3D Deep Learning Models
Chinmay Talegaonkar*, Jerry Yan*, Nicholas Antipa, Eric Terrill, Sophia Merrifield
OCEANS Conference and Expositions, 2024. Paper Code

Visual Physics: Discovering Physical Laws from Videos
Chinmay Talegaonkar*, Pradyumna Chari*, Yunhao Ba*, Achuta Kadambi
ICCP 2020 Poster, CVPR 2020 Tutorial. arXiv PrePrint
Journal Version: *On learning mechanical laws of motion from video using neural networks.*
IEEE Access, 2023. Paper

Compressive Phase Retrieval Under Poisson Noise
Chinmay Talegaonkar, Parthasarthi Khirwadkar, Ajit Rajwade
IEEE International Conference on Image Processing (**ICIP**) 2019. Paper

Work Experience

Research Intern — *Sunnyvale, CA*
Amazon Lab126 — *June 2025 – Sept 2025*

- Designed a novel data augmentation technique for indoor 3D point clouds, yielding a 3–4× improvement in mean F1 score. Applied this strategy to curate a large-scale labeled dataset of 120,000 houses, containing real and synthetic examples with diverse floor plans.
- Engineered a hybrid multiprocessing pipeline combining CPU multi-threading with GPU concurrency, deliv-

ering an 80× speedup in data generation and processing; also built a custom pipeline from scratch for training a multimodal language model with 3D point cloud inputs.

- Fine-tuned a multimodal architecture integrating a 0.5B parameter LLM (Qwen-2.5) and a 3D point cloud encoder for floor plan estimation, matching state-of-the-art methods in performance.

Research Intern *San Diego, CA*
Qualcomm AI *June 2023 – Sept 2023*

- Developed a memory-efficient generalizable NeRF-like method to create human avatars from monocular videos. Achieved comparable accuracy to existing methods. Patent Link
- Invented a point-based 3D scene representation for human modeling that reduces GPU memory usage by 10x and training time by 100x respectively.
- Engineered an end-to-end pipeline to estimate SMPL mesh, and segmentation masks from videos.

Senior Deep Learning Engineer *Mountain View, CA*
Intrinsic.ai *May 2022 – Sept 2022*

- Led the development of a novel HDR fusion algorithm, resulting in higher pose estimation accuracy for difficult lighting scenarios.
- Implemented a deep learning-based feature extractor to improve stereo matching and point cloud generation from a multi-view camera setup.

Senior Deep Learning Engineer *Palo Alto, CA*
Akasha Imaging - **acquired** by Intrinsic.ai (a group within Google) in May 2022. *May 2021 – May 2022*

- Developed an end-to-end deep learning based multi-view pose estimation pipeline with more than 99% reliability and sub-millimeter accuracy. This led to the company's first product order.
- Engineered a synthetic data generation pipeline to generate training data for segmentation and keypoint estimation algorithms.
- Contributed to tools for ML Ops, CI/CD testing, pose evaluation frameworks, and data collection setups.

Deep Learning Software Intern *Santa Clara, CA*
NVIDIA *June 2020 – Sept 2020*

- Implemented a linearized thread launching algorithm to optimize CUDA kernels for backpropagation in 2D and 3D convolution layers in popular CNN architectures, resulting in 30% speedup.
- Enabled complex valued convolution kernels in *CUTLASS* achieving more than 90% compute resource utilization.

Key Skills

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

Teaching Assistant

- Software Systems Lab — UCLA, Winter 2020
- Reinforcement Learning — UCLA, Spring 2020
- Introduction to Computer Vision — UCLA, Winter 2021
- Computational Imaging — UCSD, Spring 2024, 2025

Mentorship

- **Jerry Yan** (MS, UCSD → CS PhD at Purdue): Mentored on underwater pose estimation research, resulting in a conference paper at *OCEANS 2024* and a journal submission currently under review.
- **Nikhil G. Suresh** (MS, UCSD → Qualcomm): Supervised on real data collection for a monocular depth estimation project, resulting in a paper published at NeurIPS 2025.