

Jeff Tan

CONTACT	Website: https://jefftan969.github.io Email: jefftan@andrew.cmu.edu	
EDUCATION	Carnegie Mellon University , Pittsburgh, PA M.S. in Robotics (Research Thesis, GPA 4.17/4.33) • Advisor: Prof. Deva Ramanan	08/2023 - 08/2025
	Carnegie Mellon University , Pittsburgh, PA B.S. in Computer Science (GPA 3.96/4.00) • Thesis: <i>Distilling Neural Fields for Real-Time Articulated Shape Reconstruction</i> • Concentration in Computer Graphics, Computer Systems, Algorithms	08/2019 - 05/2023
PUBLICATIONS	Repurposing Pretrained Diffusion Models for Two-View Geometry Estimation. Jeff Tan , Nikhil Keetha, Shubham Tulsiani, Deva Ramanan. <i>In Preparation</i> , 2025. Why is Sparse-View 4D Reconstruction Hard? Zihan Wang, Jeff Tan , Tarasha Khurana, Neehar Peri, Deva Ramanan. <i>Under Review</i> , 2025. [Paper] DiffusionSfM: Predicting Structure and Motion via Ray Origin and Endpoint Diffusion. Qitao Zhao, Amy Lin, Jeff Tan , Jason Y. Zhang, Deva Ramanan, Shubham Tulsiani. <i>Under Review</i> , 2025. [Website] [Paper] DressRecon: Freeform 4D Human Reconstruction from Monocular Videos. Jeff Tan , Donglai Xiang, Shubham Tulsiani, Deva Ramanan, Gengshan Yang. <i>3DV</i> , 2025. [Website] [arXiv] [Github] Distilling Neural Fields for Real-Time Articulated Shape Reconstruction. Jeff Tan , Gengshan Yang, and Deva Ramanan. <i>CVPR</i> , 2023. [Website] [Paper] [Github] Using Deep Learning Sequence Models to Identify SARS-CoV-2 Divergence. Yanyi Ding, Zhiyi Kuang, Yuxin Pei, Jeff Tan , Ziyu Zhang, and Joseph Konan. <i>arXiv</i> , 2021. [arXiv]	
AWARDS	NSF Graduate Research Fellowship CMU Alumni Award for Undergraduate Excellence CMU Summer Undergraduate Research Fellowship	2023 - 2028 2023 2021
RESEARCH EXPERIENCE	Carnegie Mellon University , Center for Autonomous Vehicle Research Graduate Student Researcher (Advisor: Prof. Deva Ramanan) • Reconstruct dynamic 3D humans with loose clothing and handheld objects from a single video • Large-scale, photorealistic 3D site modeling from aerial and ground imagery (IARPA WRIVA) • Explore 4D reconstruction of skilled human activities from sparse multi-view video • Explore pretrained diffusion models for pointmap estimation from image pairs • Explore mesh-based neural surfaces by revisiting classic differentiable rendering (e.g. SoftRas)	08/2023 - Present

	Carnegie Mellon University , Center for Autonomous Vehicle Research Undergraduate Researcher (Advisor: Prof. Deva Ramanan) 02/2022 - 08/2023 <ul style="list-style-type: none"> • Train real-time feed-forward shape, pose, and appearance predictors by distilling offline-optimized dynamic NeRFs for object categories • Improve efficiency of 4D reconstruction from casual monocular video collections
TEACHING	Carnegie Mellon University , Pittsburgh, PA <ul style="list-style-type: none"> • Teaching Assistant, Physics-Based Rendering (15-468) Spring 2023, Spring 2024 • Teaching Assistant, Parallel Computation (15-418) Fall 2021, Spring 2022, Spring 2023 • Teaching Assistant, Introduction to Computer Systems (15-213) Fall 2021
WORK EXPERIENCE	Bodo AI 05/2022 - 08/2022 <i>Software Engineer Intern</i> , Pittsburgh, PA 02/2023 - 08/2023 <ul style="list-style-type: none"> • Develop a JIT compiler that auto-parallelizes Python and SQL code by emitting low-level MPI KLA Corporation <i>Algorithms Intern</i> , Ann Arbor, MI 05/2021 - 08/2021 <ul style="list-style-type: none"> • Train physics-informed neural networks for solving forward and inverse problems involving PDEs, towards photolithography simulations.
SOFTWARE	Lab4D: A framework for in-the-wild 4D reconstruction from monocular videos. Gengshan Yang, Jeff Tan , Alex Lyons, Neehar Peri, Deva Ramanan. [Github] [Docs] A Python library for 4D reconstruction of humans, animals, and scenes from monocular videos.
COURSE PROJECTS	Natural Dexterous Piano Playing at Scale With Video Hand Priors. Jeff Tan , Yuanhao Wang, Haoyang He. [Report] We control dexterous simulated robot hands to play piano, using Internet videos of human pianist demonstrations. Cleaning Casually Captured Splatting Scenes with Diffusion Priors. Jeff Tan , Bhuvan Jhamb, Joel Julin, Roshan Roy. [Report] We fine-tune image-conditioned diffusion models to simultaneously remove ghostly artifacts and infill plausible geometry at novel views. Physically Based Renderer. Jeff Tan. [Report] A physics-based renderer for photorealistic images that supports Monte Carlo path tracing, physically realistic materials, bidirectional path tracing, and volume rendering. C0 Compiler. Jeff Tan , Rachel Yuan. [Report] A compiler for a type-safe subset of C, outperforming gcc -O1 by 36.9% on average on CMU 15-411's benchmark suite.
SKILLS	

Programming: Python, C++, C, OCaml, JavaScript, x86 Assembly

Software: PyTorch, JAX, NumPy, CUDA

Languages: English (native), Chinese (fluent)

Citizenship: United States