Jeff Tan

CONTACT

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EDUCATION

Stanford University, Stanford, CA 09/2025 - Present
Ph.D. in Computer Science
- First-Year Rotation w/ Prof. Jiajun Wu

Carnegie Mellon University, Pittsburgh, PA 08/2023 - 08/2025
M.S. in Robotics (Research Thesis, GPA 4.17/4.33)
- Thesis: *Dynamic and Large-Scale 3D Reconstruction via Test-Time Optimization with Priors*
- Advisor: Prof. Deva Ramanan

Carnegie Mellon University, Pittsburgh, PA 08/2019 - 05/2023
B.S. in Computer Science (GPA 3.96/4.00)
- Thesis: *Distilling Neural Fields for Real-Time Articulated Shape Reconstruction*
- Concentration in Computer Graphics, Computer Systems, Algorithms

PUBLICATIONS

Benchmarking Calibration-Robust Stereo Geometry Estimation in the Wild.
Jeff Tan, Nikhil Keetha, Yifei Liu, Shubham Tulsiani, Deva Ramanan.
Under Review, 2025.
- We find that stereo geometry estimators perform poorly on real-world in-the-wild data.

CRISP: Contact-guided Real2Sim from Monocular Video with Planar Scene Primitives.
Zihan Wang*, Jiashun Wang*, **Jeff Tan**, Yiwen Zhao, Jessica Hodgins, Shubham Tulsiani, Deva Ramanan.
Under Review, 2025. [Website]
- We significantly improve terrain reconstruction for humanoid real-to-sim from RGB videos.

MonoFusion: Sparse-View 4D Reconstruction via Monocular Fusion.
Zihan Wang, **Jeff Tan**, Tarasha Khurana, Neehar Peri, Deva Ramanan.
ICCV, 2025. [Website] [Paper] [Github]
- We reconstruct dynamic human-centric scenes (e.g. playing the piano and bicycle repair) from sparse-view video.

DiffusionSfM: Predicting Structure and Motion via Ray Origin and Endpoint Diffusion.
Qitao Zhao, Amy Lin, **Jeff Tan**, Jason Y. Zhang, Deva Ramanan, Shubham Tulsiani.
CVPR, 2025. [Website] [Paper]
- An end-to-end diffusion framework that performs multi-view reasoning alongside dense per-image pointmap estimation, given sparse-view images as input.

DressRecon: Freeform 4D Human Reconstruction from Monocular Videos.
Jeff Tan, Donglai Xiang, Shubham Tulsiani, Deva Ramanan, Gengshan Yang.
3DV, 2025 (Oral). [Website] [arXiv] [Github]
- We reconstruct humans in loose clothing and interacting with objects, given a single monocular video as input, using a hierarchical deformation field and image-based priors.

Distilling Neural Fields for Real-Time Articulated Shape Reconstruction.
Jeff Tan, Gengshan Yang, and Deva Ramanan.
CVPR, 2023. [Website] [Paper] [Github]
- We learn real-time feed-forward pose and shape predictors, by distilling knowledge from offline

differentiable rendering optimizers.

AWARDS

NSF Graduate Research Fellowship 2023 - 2028

CMU Alumni Award for Undergraduate Excellence 2023

CMU Summer Undergraduate Research Fellowship 2021

RESEARCH EXPERIENCE

Stanford University, Stanford Vision and Learning Lab 09/2025 - Present
Graduate Student Researcher (Advisor: Prof. Jiajun Wu)
- Real-to-sim scene reconstruction for humanoid-object interaction
- Deep visual dynamic SLAM for unconstrained Internet videos via vision foundation models

Carnegie Mellon University, Center for Autonomous Vehicle Research 08/2023 - 08/2025
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)
- 4D reconstruction of skilled human activities from sparse multi-view video
- Repurposing pretrained diffusion models for geometry and pointmap estimation
- Benchmarking stereo geometry estimators within in-the-wild settings

Carnegie Mellon University, Center for Autonomous Vehicle Research 02/2022 - 08/2023
Undergraduate Researcher (Advisor: Prof. Deva Ramanan)
- 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 EXPERIENCE

Carnegie Mellon University, Pittsburgh, PA
- 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

SERVICE

Reviewer: CVPR, ECCV, ICLR, NeurIPS, WACV

WORK EXPERIENCE

Bodo AI 05/2022 - 08/2022
Software Engineer Intern, Pittsburgh, PA 02/2023 - 08/2023
- Develop a JIT compiler that auto-parallelizes Python and SQL code by emitting low-level MPI, speeding up massive data processing jobs by orders of magnitude on parallel clusters.

KLA Corporation
Algorithms Intern, Ann Arbor, MI 05/2021 - 08/2021
- Train physics-informed neural networks for solving forward and inverse problems involving PDEs.

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.

SKILLS

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

Software: PyTorch, JAX, NumPy, CUDA

Languages: English (native), Chinese (fluent)

Citizenship: United States