

Chensheng Peng

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EDUCATION

Ph.D. at UC Berkeley (*affiliated with BAIR, Berkeley DeepDrive*)

2023 - Present

Research: 3D Computer Vision

Advisor: Masayoshi Tomizuka

Bachelor at Shanghai Jiao Tong University (SJTU)

2019 - 2023

Electrical and Computer Engineering

GPA: 3.9/4.0

PUBLICATIONS/PREPRINTS

- DeSiRe-GS: 4D Street Gaussians for Static-Dynamic Decomposition and Surface Reconstruction for Urban Driving Scenes.** (*Arxiv*)
C. Peng, C. Zhang, Y. Wang, C. Xu, Y. Xie, W. Zheng, K. Keutzer, M. Tomizuka, and W. Zhan
- A Lesson in Splats: Teacher-Guided Diffusion for 3D Gaussian Splats Generation with 2D Supervision.** (*Arxiv*)
C. Peng, I. Sobol, M. Tomizuka, K. Keutzer, C. Xu, and O. Litany
- Q-SLAM: Quadric Representations for Monocular SLAM.** (*CoRL 2024*)
C. Peng, C. Xu, Y. Wang, M. Ding, H. Yang, M. Tomizuka, M. Pavone, and W. Zhan
- X-Drive: Cross-modality consistent multi-sensor data synthesis for driving scenarios.** (*Arxiv*)
Y. Xie*, C. Xu*, C. Peng, S. Zhao, N. Ho, A. Pham, M. Ding, M. Tomizuka, and W. Zhan
- CompGS: Unleashing 2D Compositionality for Compositional Text-to-3D via Dynamically Optimizing 3D Gaussians** (*Arxiv*)
C. Ge*, C. Xu*, Y. Ji, C. Peng, M. Tomizuka, P. Luo, M. Ding, W. Zhan and V. Jampani
- DELFlow: Dense Efficient Learning of Scene Flow for Large-Scale Point Clouds.** (*ICCV 2023*)
C. Peng, G. Wang, X. Lo, C. Xu, M. Tomizuka, W. Zhan, and H. Wang
- Multi-Modal Object Tracking with Pareto Neural Architecture Search.** (*IEEE RA-L*)
C. Peng, Z. Zeng, J. Gao, J. Zhou, X. Wang, C. Zhou, and N. Ye
- DVLO: Deep visual-lidar odometry with local-to-global feature fusion and bi-directional structure alignment.** (*ECCV 2024 Oral*)
J. Liu, D. Zhuo, Z. Feng, S. Zhu, C. Peng, Z. Liu, H. Wang
- Optimizing diffusion models for joint trajectory prediction and controllable generation.** (*ECCV 2024*)
Y. Wang, C. Tang, L. Sun, S. Rossi, Y. Xie, C. Peng, T. Hannagan, S. Sabatini
- Joint Pedestrian Trajectory Prediction through Posterior Sampling.** (*IROS 2024*)
H. Lin, Y. Wang, M. Huo, C. Peng, Z. Liu, M. Tomizuka
- Interactive Multi-scale Fusion of 2D and 3D Features for Multi-object Tracking.** (*IEEE T-ITS*)
G. Wang*, C. Peng*, J. Zhang, and H. Wang (* equal contribution)
- Object Detection with OOD Generalizable Neural Architecture Search.** (*ICLR 2023 Workshop*)
F. Wu, K. Li, J. Gao, C. Peng, L. Hong, E. Xie, Z. Li and N. Ye
- Certifiable out-of-distribution generalization.** (*AAAI 2023*)
N. Ye, L. Zhu, J. Wang, Z. Zeng, J. Shao, C. Peng, B. Pan, K. Li, J. Zhu

WORK EXPERIENCE

Foundation model for perception in autonomous driving

Nov. 2024 – Pre

Research Intern @ Applied Intuition

Mountain View, CA

RESEARCH EXPERIENCE

3D Generation from Single Image <i>Advisor: Or Litany</i> * Developed a teacher-guided diffusion model for gaussain splatting from single-view images.	Jul. 2024 – Pre <i>Nvidia & Technion (remote)</i>
4D Gaussian Splatting for Scene Reconstruction <i>Advisor: Masayoshi Tomizuka</i> * Proposed a self-supervised pipeline for static-dynamic decomposition and surface reconstruction.	Jan. 2024 – Nov. 2024 <i>UC Berkeley</i>
3D Dense Reconstruction with Monocular SLAM <i>Advisor: Yue Wang</i> * Developed an efficient pipeline for Simultaneous Localization and Mapping (SLAM).	Jun. 2023 – Nov. 2023 <i>USC (remote)</i>
Efficient Processing of Large-Scale Point Clouds <i>Advisor: Hesheng Wang</i> * Developed an efficient framework for scene flow prediction from large-scale point clouds.	Jun. 2022 – Mar. 2023 <i>Shanghai, China</i>
Latency Reduction for Multiple Object Tracking <i>Advisor: Nanyang Ye</i> * Proposed to search for efficient tracking network with Neural Architecture Search (NAS).	Nov. 2021 – May. 2022 <i>Shanghai, China</i>

SKILLS

Computer Skills	Python, PyTorch, TensorFlow, C/C++, MATLAB
Language	Chinese(native), English(fluent)