

Jianteng Chen

PERSONAL DATA

NAME: Jianteng Chen (陈建腾)
PHONE: +86 13395020663
EMAIL: chenjiantengx@gmail.com
HOMEPAGE: <https://jiantengchen.github.io/>

RESEARCH EXPERIENCE

since 04/2023	Research Intern at AIR, Tsinghua University, supervised by Prof. Hao Zhao, Tsinghua University
since 04/2024	Research Intern at Great Bay University, supervised by Prof. Guangcong Wang
since 09/2024	Internship at NIO, Autonomous Driving Development, Calibration Department

SCIENTIFIC EDUCATION

08/2024-12/2024	EXCHANGE STUDENT, in Computer Science. The Hong Kong University of Science and Technology
09/2021-06/2025	BACHELOR OF ENGINEERING, in Cyberspace of Science and Technology. Beijing Institute of Technology (BIT), China

SELECTED PUBLICATIONS

Conference

- [1] J. Liu, W. Hu, Z. Yang, J. Chen, G. Wang, *et al.*, "Rip-nerf: Anti-aliasing radiance fields with ripmap-encoded platonic solids," *SIGGRAPH*, Apr. 2024. arXiv: [2405.02386](https://arxiv.org/abs/2405.02386) [cs].
- [2] H. Lou, Y. Liu, Y. Pan, Y. Geng, J. Chen, *et al.*, "Robo-gs: A physics consistent spatial-temporal model for robotic arm with hybrid representation," *Preprint*, 2024. arXiv: [2408.14873](https://arxiv.org/abs/2408.14873) [cs.R0].
- [3] Z. Wu, T. Liu, L. Luo, Z. Zhong, J. Chen, *et al.*, "MARS: An Instance-aware, Modular and Realistic Simulator for Autonomous Driving," *CAAI International Conference on Artificial Intelligence (CICAI)*, Jul. 2023, **Best Paper Runner-up Award**. arXiv: [2307.15058](https://arxiv.org/abs/2307.15058) [cs].

PROJECTS

1 NeRF-based Simulator for Complex Dynamic Outdoor Driving Scene

- Proposed the **first open-source and SOTA** solution for reconstructing complex dynamic outdoor driving scenes using compositional neural radiance fields.
- Implemented an agile code framework that built upon [NeRFStudio](#) as tech leader.
- Presented CICAI 2023 conference paper, earning Best Paper Runner-up. Actively maintained [code repository](#) with 632 stars.
- Follow-up work includes supporting other datasets, developing new function feature branches, etc.

- 2 **Instance Optimization for Foreground Objects in Autonomous Driving Scenes**
 - Represented foreground objects using instance modules, reducing memory consumption when loading datasets through modularization, and providing easily accessible interfaces for future scene object editing.
 - Developed an algorithm to jointly optimize inaccurately calibrated bounding boxes during training, achieving better training performance.
- 3 **Anti-aliasing NeRF with ripmap-encoded platonic solids**
 - Developed a Ripmap-Encoded Platonic Solid representation to precisely and efficiently feature 3D anisotropic areas, enabling high-fidelity anti-aliasing renderings and enhanced detail in repetitive structures and textures.
 - Achieve higher PSNR than [Zip-NeRF](#) while maintaining efficient reconstruction on both the [Blender](#) and real-world captured dataset.
- 4 **Decoupling Reflectance Modeling in Dynamic Scenes with Neural Radiance Fields**
 - Propose a novel second-pass model for reflectance modeling in dynamic decomposed scenes, enhancing mirror surface reconstruction and reflected light handling.
 - Achieved 3dB PSNR improvement over baseline method, and demonstrated successful reflectance modeling in dynamic decomposed radiance fields.
- 5 **Three Dimensional Lidar Scene Simulator**
 - Develop a Lidar-based autonomous driving simulator using digital delay devices, laser light sources, and a Spatial Light Modulator (SLM) to control temporal and spatial laser signal properties precisely.
 - Use SLM to allocate laser signals to different time zones, create temporal information, and control the spatial position and intensity of the laser.

HONORS & AWARDS

- **Second Prize** of The 10th National Undergraduate Optoelectronics Design Competition in North China 10/2022
- **Champion** of The 3rd GBA Robotics Competition and the 10th Asian-Pacific Championship trails 08/2019
- **Gold Award** of VEX Robotics World Championship 04/2016
- **First Prize** of the 15th China Youth Robotics Competition 07/2015
- **Gold Award** in Asia Pacific Robotics Championship 12/2014
- **First Prize** of the Asia Pacific Robotics Championship China Regional Qualifiers 08/2014

SKILLS & INTERESTS

LANGUAGES: Chinese (native), English (fluent)

PROGRAMMING LANGUAGES: Python, Go, C/C++, Javascript

OPERATING SYSTEMS: Linux, Windows

MACHINE LEARNING TOOLCHAIN: Markdown, \LaTeX , [NeRFStudio](#), PyTorch