

JIANTENG CHEN

PERSONAL DATA

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RESEARCH EXPERIENCE

since 04/2023	Research Intern at Institute for AI Industry Research (AIR), Tsinghua University, supervised by Prof. Hao Zhao , Tsinghua University
since 04/2024	Research Intern at Great Bay University, supervised by Prof. Guangcong Wang

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 \[cs\]](#).
- [2] 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 \[cs\]](#).

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 using instance modules to represent the foreground objects for possible optimization for bounding boxes, supporting other datasets, etc.

2 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.
- 3 **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.
- 4 **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.
- 5 **Mininal Version of Tiktok**
- Based on Gin and Gorm, using MySQL to realize the database
 - Using OSS for video storage and cover extraction
 - Realized the basic API and interactive API(such as video streaming API, login API, comment API, etc)

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