Zehan Zheng

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EDUCATION

Tongji University, China Sept. 2022 - Present
M.S.E. Student in Autonomous Driving, Vehicle Engineering
GPA: 4.7 / 5.0, Advised by Prof. Guang Chen

Tongji University, China Sept. 2017 - July 2022
B.E. in Vehicle Engineering (5 years)
GPA: 4.5 / 5.0

RESEARCH INTEREST

3D Computer Vision, Dynamic Reconstruction, Autonomous Driving Perception

RESEARCH EXPERIENCE

Intelligent Sensing, Perception and Computing Lab (ISPC) 2022 - Present
Research Assistant *Tongji University, Shanghai*

- Advisor: Prof. Guang Chen
- Research included: 3D Point Clouds, 4D Reconstruction, Neural Fields
  - + Proposed a self-supervised multi-frame point cloud interpolation framework using 4D spatio-temporal neural fields to implicitly represent complex motion (paper accepted by CVPR 2023).
  - + Proposed a differentiable framework for novel space-time LiDAR view synthesis, which reconstructs and generates dynamic driving scenarios end-to-end (paper submitted to CVPR 2024).

OpenDriveLab, Shanghai AI Laboratory Dec. 2021 - June 2022
Research Intern *Shanghai*

- Research included: 3D Laneline Detection in Autonomous Driving
- Advisor: Prof. Hongyang Li
  - + Proposed a monocular 3D lane detector with a novel Transformer-based BEV feature module and the first large-scale real-world 3D lane detection benchmark (paper accepted by ECCV 2022).

Comprehensive Perception Research Group (CPRG) Mar. 2021 - Nov. 2021
Research Intern *Tongji University, Shanghai*

- Research included: Fish-eye Camera Calibration, Bird's Eye View (BEV)
- Advisor: Prof. Wei Tian
  - + Proposed a novel calibration method for vehicle-mounted surround fish-eye cameras via an unmanned aerial vehicle and developed a real-time bird's eye view generator (Github Star 400+).

ACADEMIC SERVICES

- Reviewer: CVPR 2024, ECCV 2024 (invited)
- Invited Talk for Shanghai Computer Society (SCS) and China Society of Image and Graphics (CSIG)

PUBLICATIONS

Zehan Zheng, Danni Wu, Ruisi Lu, Fan Lu, Guang Chen, Changjun Jiang. **NeuralPCI**: Spatio-temporal Neural Field for 3D Point Cloud Multi-frame Non-linear Interpolation. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2023.

Li Chen*, Chonghao Sima*, Yang Li*, **Zehan Zheng**, Jiajie Xu, Xiangwei Geng, Hongyang Li, Conghui He, Jianping Shi, Yu Qiao, Junchi Yan. **PersFormer**: 3D Lane Detection via Perspective Transformer and the OpenLane Benchmark. In *Proceedings of the European Conference on Computer Visio*n (**ECCV**), 2022 (**Oral**).

Zehan Zheng, Fan Lu, Weiyi Xue, Guang Chen, Changjun Jiang. **LiDAR4D**: Dynamic Neural Fields for Novel Space-time View LiDAR Synthesis. *Under review*, 2023.

HONORS & AWARDS

- Excellent Graduate of Tongji University 2022
- Outstanding Student of Tongji University 2018, 2021
- First Prize of Tongji University Scholarship (Top 2%) 2018, 2021
- National First Prize in Formula Student China Competition (FSC) 2020
- National Second Prize of China Undergraduate Mathematical Contest in Modeling (CUMCM) 2020

ENGINEERING EXPERIENCE

Tongji University (Formula SAE) Racing Team sponsored by Lotus 2018 - 2021

Technical Leader & Driver & Aerodynamics Designer *Shanghai*

- Achieve **1st** in Formula Student China (FSC) 2019, **3rd** in Formula Student Japan (FSJ) 2019, **3rd** in FSC 2020 and **2nd** in FSC 2021
- Best Aerodynamics Award in FSJ 2019, Best Design Report Award in FSC 2020
- Assistant Engineer Certificate recognized by SAE China

SKILLS

Languages: Chinese (Native), English (Proficient)

Programming: Python, MATLAB, C/C++

Libraries: Pytorch, OpenCV, Open3D

Softwares: CATIA, Star-CCM+