Zehan Zheng

https://dyfcalid.github.io/ zzheng62@jh.edu Google Scholar GitHub ★2k+

EDUCATION

Johns Hopkins University
Ph.D. Student in Computer Science, Advised by Prof. Alan L. Yuille — Sept. 2025 - Present

Tongji University
M.S.E. in Autonomous Driving, Vehicle Engineering — Sept. 2022 - June 2025
GPA: 4.7 / 5.0 (WES 4.0/4.0), Advised by Prof. Guang Chen
B.E. in Vehicle Engineering (5-year program) — Sept. 2017 - July 2022
GPA: 4.5 / 5.0 (WES 3.93/4.0)

RESEARCH INTEREST

3D Computer Vision, Reconstruction, Generative Models, World Models, VLMs, Embodied AI

RESEARCH EXPERIENCE

CCVL **Lab, Johns Hopkins University** — Sept. 2025 - Present
Research Assistant, *Advisor: Prof. Alan L. Yuille* — *Baltimore, US*
- Topics: World Models, Vision-Language Models, Embodied Spatial Reasoning

SU Lab, **University of California San Diego** — July 2024 - Dec 2024
Research Intern, *Advisor: Prof. Hao Su* — *San Diego, US*
- Topics: 3D Indoor Scene Generation, Latent Diffusion Models

GEAI **Lab, Tongji University** — July 2022 - June 2025
Research Assistant, *Advisor: Prof. Guang Chen* — *Shanghai, CN*
- Topics: 4D Reconstruction, Neural Fields, Dynamic Driving World Models

OpenDriveLab, **Shanghai AI Laboratory** — Dec. 2021 - June 2022
Research Intern, *Advisor: Prof. Hongyang Li* — *Shanghai, CN*
- Topics: 3D Perception for Autonomous Driving, BEV Transformers

CPRG **Lab, Tongji University** — Mar. 2021 - Nov. 2021
Research Intern, *Advisor: Prof. Wei Tian* — *Shanghai, CN*
- Topics: Fish-eye Camera Calibration, Bird's Eye View (BEV)

PUBLICATIONS

Yifan Yin, Zehao Wen, Jieneng Chen, **Zehan Zheng**, Nanru Dai, Haojun Shi, Suyu Ye, Aydan Huang, Zheyuan Zhang, Alan Yuille, Jianwen Xie, Ayush Tewari, Tianmin Shu. **3D-Belief**: A Generative 3D World Model for Embodied Reasoning and Planning. *arXiv:2605.11367*.

Jonathan Lee, Xingrui Wang, Jiawei Peng, Luoxin Ye, **Zehan Zheng**, Tiezheng Zhang, Tao Wang, Wufei Ma, Siyi Chen, Yu-Cheng Chou, Prakhar Kaushik, Alan Yuille. **Perceptual Taxonomy**: Evaluating and Guiding Hierarchical Scene Reasoning in Vision-Language Models. *arXiv:2511.19526*.

Zehan Zheng, Fan Lu, Weiyi Xue, Guang Chen, Changjun Jiang. **LiDAR4D**: Dynamic Neural Fields for Novel Space-time View LiDAR Synthesis. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2024.

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.

Weiyi Xue*, **Zehan Zheng***, Fan Lu, Haiyun Wei, Guang Chen, Changjun Jiang. GeoNLF: Geometry-guided Pose-Free Neural LiDAR Fields. *Advances in Neural Information Processing Systems* (**NeurIPS**), 2024.

Shanshan Zhong, Jiawei Peng, **Zehan Zheng**, Zhongzhan Huang, Wufei Ma, Guofeng Zhang, Qihao Liu, Alan Yuille, Jieneng Chen. 4D-Animal: Freely reconstructing animatable 3D animals from videos. In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision* (**WACV**), 2026.

Weiyi Xue, Fan Lu, Chi Zhang, Tianhang Wang, Sanqing Qu, **Zehan Zheng**, Boyuan Zheng, Junqiao Zhao, Guang Chen. Signal Structure-Aware Gaussian Splatting for Large-Scale Scene Reconstruction. In *Proceedings of International Conference on Learning Representations* (**ICLR**), 2026.

Weiyi Xue, Fan Lu, Yunwei Zhu, **Zehan Zheng**, Sanqing Qu, Jiangtong Li, Ya Wu, Haiyun Wei, Guang Chen. Multimodal LiDAR-Camera Novel View Synthesis with Unified Pose-free Neural Fields. In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2025.

Tianhang Wang, Fan Lu, **Zehan Zheng**, Guang Chen, Changjun Jiang. RCDN: Towards Robust Camera-Insensitivity Collaborative Perception via Dynamic Feature-based 3D Neural Modeling. *Advances in Neural Information Processing Systems* (**NeurIPS**), 2024.

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 Vision* (**ECCV**), 2022 (**Oral**).

ACADEMIC SERVICES

- Reviewer: IJCV, CVPR'24'26, ECCV'24'26, NeurIPS'24'26, AAAI'25, ICLR'25'26, ICML'25
- Talks at Princeton University (Dec 2024) and China Society of Image and Graphics (May 2023, 2024)

HONORS & AWARDS

- NeurIPS Scholar Award (Travel Grant) 2024
- Excellent Graduate of Tongji University 2022, 2025
- First Prize of Tongji University Scholarship (Top 2%) 2018, 2021, 2023
- National First Prize in Formula Student China Competition (FSC) 2020
- National Second Prize of China Undergraduate Mathematical Contest in Modeling (CUMCM) 2020

LEADERSHIP

- **Tongji Formula SAE** Racing Team (sponsored by Lotus), Technical Leader & Driver 2018 - 2021
  1st in FSC 2019, **3rd** in FSJ 2019, **3rd** in FSC 2020, **2nd** in FSC 2021; Best Aerodynamics Award (FSJ 2019)

SKILLS

Programming: Python, C/C++, MATLAB

Tools: Linux, Git, Docker, Slurm

Libraries: Pytorch, OpenCV, Open3D, Gaussian-Splatting, Diffusers, Blender, vLLM

Languages: Chinese (Native), English (Proficient, TOEFL 102)