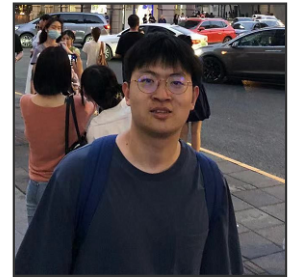


Zhenyu Li

PHD STUDENT AT KAUST · CV RESEARCHER

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Summary

I'm currently a first-year PhD student advised by Prof. Peter Wonka at King Abdullah University of Science and Technology (KAUST).

My research interests are in the area of computer vision and computer graphics. I am mainly focusing on 3D scene perception and understanding. I have conducted several research projects, including monocular depth estimation, multi-modal self-supervised pre-training, 3D object detection from multi-sensors, etc.

I'm self-driven and enthusiastic about researching. I'm familiar with most computer vision techniques, have much development experience, and can explore topics independently. I look for working on more solid and interesting work!

Education

King Abdullah University of Science and Technology

PHD IN COMPUTER SCIENCE

Thuwal, Saudi Arabia

Sep. 2023 - Present

Harbin Institute of Technology

M.S. IN COMPUTER SCIENCE AND TECHNOLOGY

Harbin, China

Sep. 2021 - Jul. 2023

- Rank 2 in the comprehensive assessment of computer science department

Harbin Institute of Technology

B.S. IN COMPUTER SCIENCE AND TECHNOLOGY (89.58/100, TOP 25%)

Harbin, China

Sep. 2017 - Jul. 2021

- Got exemption from examination and scholarship for postgraduate study in Harbin Institute of Technology

Work Experience

Didi Cargo

ELITE RESEARCH INTERN

Beijing, China

Sep. 2022 - Mar. 2023

- Researched semi-supervised algorithms for monocular 3D object detection. One paper as the first author was published on Arxiv.

SenseTime Research

RESEARCH INTERN

Shanghai, China

Jan. 2022 - Jul. 2022

- Researched unsupervised domain adaptation algorithms for monocular 3D object detection. One paper as the first author was accepted to ECCV 2022.
- Deployed the aforementioned unsupervised domain adaptation algorithm in industrial project with GAC Group. Achieved expected goals.
- Researched domain generalization and unsupervised domain adaptation algorithms for monocular 3D object detection. One paper as the first author was published on Arxiv.

SenseTime Research

PERCEPTION ALGORITHM DEVELOPMENT INTERN

Shanghai, China

Mar. 2021 - Sep. 2021

- Built up a ReID dataset based on the ground-truth system, utilized the Fast-ReID framework to train a ReID model, and developed the ReID model to the ADAS system.
- Built and deployed the DeepSort multi-object tracking algorithm in the ADAS system (C++), including importing appearance representation from the ReID model and adopting the cascade association strategy. The algorithm formed a patent for SenseTime.
- Researched multi-object tracking algorithms.
- Researched multi-modal contrastive learning algorithms for spatial-aware visual representations to benefit 3D-related downstream tasks. One paper as the first author was accepted to AAAI 2022.

Research

Codebase

- Monocular-Depth-Estimation-Toolbox: <https://github.com/zhyever/Monocular-Depth-Estimation-Toolbox>.
- Support several SoTA methods and obtain **800+ stars**.

First Author

- **Zhenyu Li**, Shariq Farooq Bhat, Peter Wonka. PatchRefiner: Leveraging Synthetic Data for Real-Domain High-Resolution Monocular Metric Depth Estimation ECCV 2024.
- **Zhenyu Li**, Shariq Farooq Bhat, Peter Wonka. PatchFusion: An End-to-End Tile-Based Framework for High-Resolution Monocular Metric Depth Estimation. CVPR 2024. **It obtains 900+ stars.**
- **Zhenyu Li**, Zehui Chen, Ang Li, Liangji Fang, Qinhong Jiang, Xianming Liu, Junjun Jiang. Unsupervised Domain Adaptation for Monocular 3D Object Detection via Self-Training. ECCV 2022.
- **Zhenyu Li**, Zehui Chen, Jialei Xu, Xianming Liu, Junjun Jiang. LiteDepth: Digging into Fast and Accurate Depth Estimation on Mobile Devices. ECCVW 2022.
- **Zhenyu Li**, Zehui Chen, Ang Li, Liangji Fang, Qinhong Jiang, Xianming Liu, Junjun Jiang, Bolei Zhou, Hang Zhao. SimIPU: Simple 2D Image and 3D Point Cloud Unsupervised Pre-Training for Spatial-Aware Visual Representations. AAAI 2022.
- **Zhenyu Li**, Xuyang Wang, Xianming Liu, Junjun Jiang. BinsFormer: Revisiting Adaptive Bins for Monocular Depth Estimation. Transactions on Image Processing. Rank 1st on KITTI benchmark. (Feb, 2022).
- **Zhenyu Li**, Zehui Chen, Junjun Jiang, Xianming Liu. DepthFormer: Exploiting Long-Range Correlation and Local Information for Accurate Monocular Depth Estimation. Machine Intelligence Research. Rank 1st on KITTI benchmark. (Nov, 2021).
- **Zhenyu Li**, Junjun Jiang, and Xianming Liu. Enhancing Self-supervised Monocular Depth Estimation via Discrete Disparity and Uncertainty. Letter for IEEE/CAA Journal of Automatica Sinica 2022.
- **Zhenyu Li**, Zehui Chen, Zehui Chen, Ang Li, Liangji Fang, Qinhong Jiang, Xianming Liu, Junjun Jiang. Towards Model Generalization for Monocular 3D Object Detection. Arxiv.
- **Zhenyu Li**, Zhipeng Zhang, Heng Fan, Yuan He, Ke Wang, Xianming Liu, Junjun Jiang. Augment and Criticize: Exploring Informative Samples for Semi-Supervised Monocular 3D Object Detection. Arxiv.

Co-Author

- Wamiq Reyaz Para, Abdelrahman Eldesokey, **Zhenyu Li**, Pradyumna Reddy, Jiankang Deng, Peter Wonka. AvatarMMC: 3D Head Avatar Generation and Editing with Multi-Modal Conditioning. Arxiv.
- Zehui Chen, **Zhenyu Li**, Shuo Wang, Dengpan Fu, Feng Zhao. Learning from Noisy Data for Semi-Supervised 3D Object Detection. ICCV 2023.
- Zehui Chen, **Zhenyu Li**, Shiquan Zhang, Liangji Fang, Qinhong Jiang, Feng Zhao. Graph-DETR3D: Rethinking Overlapping Regions for Multi-View 3D Object Detection. ACM MM 2022.
- Zehui Chen, **Zhenyu Li**, Shiquan Zhang, Liangji Fang, Qinhong Jiang, Feng Zhao. Deformable Feature Aggregation for Dynamic Multi-Modal 3D Object Detection. ECCV 2022.
- Zehui Chen, **Zhenyu Li**, Shiquan Zhang, Liangji Fang, Qinhong Jiang, Feng Zhao, Bolei Zhou, Hang Zhao. Pixel-Instance Feature Aggregation for Multi-Modal 3D Object Detection. IJCAI 2022.
- Junjun Jiang, **Zhenyu Li**, Xianming Liu. Deep Learning based Monocular Depth Estimation: A Survey. Chinese Journal of Computers 2022.

Honors & Awards

2024	KAUST CEMSE Dean’s List Scholarship , top 20% of PhD students	<i>Saudi Arabia</i>
2023	VCL 2023 Multitask Learning for Robustness Challenge (ICCV 2023 Workshop) , 1st Place	<i>Online</i>
2022	SSLAD 2022 3D Object Detection Challenge (ECCV 2022 Workshop) , 3rd Place	<i>Online</i>
2022	Mobile AI & AIM 2022 Monocular Depth Estimation Challenge (ECCV 2022 Workshop) , 2nd Place	<i>Online</i>
2022	China National Scholarship , Harbin Institute of Technology	<i>China</i>
2022	Chunhui Scholarship at Harbin Institute of Technology , Final List	<i>China</i>