Xinge ZHU

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[Homepage](#)   [Google Scholar](#)

PROFESSIONAL SUMMARY

- Extensive research experience on deep learning, 3D vision, and robotics
- Strong experience in leading research teams, making product-level solutions and collaborating with industrial partners
- Outstanding record of publication, with over **40** papers published on top conferences and journals (TPAMI, IJCV, CVPR, ICCV, etc) and **3000+** citations

EDUCATION

Ph.D   Sep. 2018 - July. 2021
- MMLab, the Chinese University of Hong Kong
- Supervisor: Dahua Lin

Research Assistant   Sep. 2015 - Jan. 2017
- Institute of Computing Technology, Chinese Academy of Sciences

B.Eng   July. 2011 - July. 2015
- Shandong University

WORK EXPERIENCE

TopMinds 天才少年, Tech LEAD   Aug. 2021 - present
★ **HUAWEI Advanced Driving Solution (ADS)**
- Lead a team with more than 20 people working on cutting-edge and product-level multi-modality 3D perception for autonomous vehicles. Mass production on AITO M5 M7 and AVATR E11.
- Outstanding Individual of Car Business Unit

Research Consultant   Apr. 2020 - June. 2021
★ **INCEPTIO**
- Work on point-cloud segmentation and detection, and achieve multiple champions of global challenges.
- Work closely with Prof. Ruigang Yang

Researcher   Feb. 2017 - July. 2018
★ **SenseTime**
- Work on domain adaptation and zero-shot learning
- Work closely with Dr. Jianping Shi

AWARDS

- **Best paper award** on the ICCV 3DODI workshop,   2022.10
- The 2nd places in Waymo Camera-only 3D Detection,   2022.08
- "TrafficPredict: Trajectory Prediction For Heterogeneous Traffic-Agents" obtained Most Influential AAAI Papers of AAAI 2019. Rank 13.   2021
- The **1st** place in NuScenes Camera-based 3D Detection,   2020.12
- The 2nd places in NuScenes LiDAR Semantic Segmentation,   2020.12
- The **1st** place in SemanticKITTI Semantic & Panoptic Segmentation, 2020.11
- Gold Medal, Lyft 3D Detection challenge,   2019.07
- Gold Medal (Runner-up), NuScenes 3D Detection challenge,   2019.03
- **Best paper candidate** of PCM (Pacific-Rim Conference on Multimedia), 2017
- Top100, Baidu A-Star Programming Contest   2013
- Golden Medal (Runner-up), Shandong Provincial Programming Contest   2013
- Silver Medal, The ACM/ICPC Asia Regional Contest Tonghua Site   2012

ACADEMIC SERVICES

I reviewed papers for the following journals:
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- International Journal of Computer Vision (IJCV)
- IEEE Transactions on Multimedia (TMM)
- Springer Journal of Multimedia Tools and Applications (MTA)

I served on the TPC Member and reviewer of the following conferences:
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
- International Conference on Learning Representations (ICLR)
- The AAAI Conference on Artificial Intelligence (AAAI)
- Conference on Neural Information Processing Systems (NeurIPS)
- European Conference on Computer Vision (ECCV)

PUBLICATIONS #: Corresponding Author; ⋆: Co-first Author

1. **Xinge Zhu**, Hui Zhou, Tai Wang, Fangzhou Hong, Yuexin Ma, Wei Li, Hongsheng Li, Dahua Lin Cylindrical and Asymmetrical 3D Convolution Networks for LiDAR Segmentation, **CVPR (Oral). 2021**, rank 1st in LiDAR Semantic Segmentation of SemanticKITTI

2. **Xinge Zhu**, Yuexin Ma, Tai Wang, Yan Xu, Jianping Shi, Dahua Lin. SSN: Shape Signature Networks for Multi-class Object Detection from Point Clouds. ECCV. 2020.

3. **Xinge Zhu**, Hui Zhou, Tai Wang, Fangzhou Hong, Wei Li, Yuexin Ma, Hongsheng Li, Ruigang Yang, Dahua Lin. Cylindrical and Asymmetrical 3D Convolution Networks for LiDAR-based Perception. IEEE Transactions on Pattern Analysis and Machine Intelligence. 2021

4. Ma, Yuexin* and **Xinge Zhu*** and Cheng, Xinjing and Yang, Ruigang and Liu, Jiming and Manocha, Dinesh AutoTrajectory: Label-free Trajectory Extraction and Prediction from Videos using Dynamic Points, ECCV. 2020.

5. **Xinge Zhu**, Jiangmiao Pang, Ceyuan Yang, Jianping Shi, Dahua Lin. Adapting object detectors via selective cross-domain alignment. CVPR. 2019.

6. Ruoqi Sun*, **Xinge Zhu***, Chongruo Wu, Chen Huang, Jianping Shi, Lizhuang Ma. Not all areas are equal: Transfer learning for semantic segmentation via hierarchical region selection. **CVPR (Oral)**. 2019.

7. Yuexin Ma*, **Xinge Zhu***, Sibo Zhang, Ruigang Yang, Wenping Wang, Dinesh Manocha. TrafficPredict: Trajectory prediction for heterogeneous traffic-agents. **AAAI (Oral)**. 2019.

8. **Xinge Zhu**, Zhichao Yin, Jianping Shi, Hongsheng Li, Dahua Lin. Generative Adversarial Frontal View to Bird View Synthesis. **3DV (Oral)**. 2018.

9. **Xinge Zhu**, Hui Zhou, Ceyuan Yang, Jianping Shi, Dahua Lin. Penalizing Top Performers: Conservative Loss for Semantic Segmentation Adaptation. ECCV. 2018.

10. **Xinge Zhu**, Liang Li, Weigang Zhang, Tianrong Rao, Min Xu, Qingming Huang, Dong Xu. Dependency Exploitation: A Unified CNN-RNN Approach for Visual Emotion Recognition. IJCAI. 2017

11. Huitong Yang, Xuyang Bai, **Xinge Zhu**[#], Yuexin Ma. One Training for Multiple Deployments: Polar-based Adaptive BEV Perception for Autonomous Driving. ICRA. 2023

12. Mingkun Wang, **Xinge Zhu**, Changqian Yu, Wei Li, Yuexin Ma, Ruochun Jin, Xiaoguang Ren, Dongchun Ren, Mingxu Wang, Wenjing Yang. Ganet: Goal area network for motion forecasting. ICRA. 2023

13. Xidong Peng, **Xinge Zhu**, Yuexin Ma. CL3D: Unsupervised Domain Adaptation for Cross-LiDAR 3D Detection. AAAI. 2023.

14. Runnan Chen, **Xinge Zhu**, Nenglun Chen, Wei Li, Yuexin Ma, Ruigang Yang, Wenping Wang. Bridging Language and Geometric Primitives for Zero-shot Point Cloud Segmentation. ACMMM. 2023

15. Ming Nie, Yujing Xue, Chunwei Wang, Chaoqiang Ye, Hang Xu, **Xinge Zhu**, Qingqiu Huang, Michael Bi Mi, Xinchao Wang, Li Zhang. PARTNER: Level up the Polar Representation for LiDAR 3D Object Detection. ICCV. 2023

16. Yiteng Xu, Peishan Cong, Yichen Yao, Runnan Chen, Yuenan Hou, **Xinge Zhu**, Xuming He, Jingyi Yu, Yuexin Ma. Human-centric Scene Understanding for 3D Large-scale Scenarios. ICCV. 2023

17. Yuhang Lu, Qi Jiang, Runnan Chen, Yuenan Hou, **Xinge Zhu**, Yuexin Ma. See More and Know More: Zero-shot Point Cloud Segmentation via Multi-modal Visual Data. ICCV. 2023

18. Lingdong Kong, Youquan Liu, Runnan Chen, Yuexin Ma, **Xinge Zhu**, Yikang Li, Yuenan Hou, Yu Qiao, Ziwei Liu. Rethinking range view representation for lidar segmentation. ICCV. 2023

19. Xiangze Jia, Hui Zhou, **Xinge Zhu**, Yandong Guo, Ji Zhang, Yuexin Ma. Contrast-Motion: Self-supervised Scene Motion Learning for Large-Scale LiDAR Point Clouds. IJCAI. 2023

20. Zhaoyang Xia, Youquan Liu, Xin Li, **Xinge Zhu**, Yuexin Ma, Yikang Li, Yuenan Hou, Yu Qiao. SCPNet: Semantic Scene Completion on Point Cloud. CVPR (Highlight). 2023

21. Runnan Chen, Youquan Liu, Lingdong Kong, **Xinge Zhu**, Yuexin Ma, Yikang Li, Yuenan Hou, Yu Qiao, Wenping Wang. CLIP2Scene: Towards Label-efficient 3D Scene Understanding by CLIP. CVPR. 2023

22. Peishan Cong, **Xinge Zhu**, Feng Qiao, Yiming Ren, Xidong Peng, Yuenan Hou, Lan Xu, Ruigang Yang, Dinesh Manocha, Yuexin Ma. STCrowd: A Multimodal Dataset for Pedestrian Perception in Crowded Scenes. CVPR. 2022

23. Xuyang Bai, Zeyu Hu, **Xinge Zhu**, Qingqiu Huang, Yilun Chen, Hongbo Fu, Chiew-Lan Tai. TransFusion: Robust LiDAR-Camera Fusion for 3D Object Detection with Transformers. CVPR. 2022

24. Yuenan Hou, **Xinge Zhu**, Yuexin Ma, Chen Change Loy, Yikang Li. Point-to-Voxel Knowledge Distillation for LiDAR Semantic Segmentation. CVPR. 2022

25. Xidong Peng, **Xinge Zhu**, Yuexin Ma. SIDE: Center-based Stereo 3D Detector with Structure-awareInstance Depth Estimation. WACV. 2022

26. Yiming Ren, Peishan Cong, **Xinge Zhu**, Yuexin Ma. Self-supervised Point Cloud Completion on Real Traffic Scenes via Scene-concerned Bottom-up Mechanism. ICME. 2022

27. Xiao Song, Guorun Yang, **Xinge Zhu**, Hui Zhou, Yuexin Ma, Zhe Wang, Jianping Shi. AdaStereo: An Efficient Domain-Adaptive Stereo Matching Approach. International Journal of Computer Vision. 2022.

28. Wanli Chen, **Xinge Zhu**, Guojin Chen, Bei Yu. Efficient Point Cloud Analysis Using Hilbert Curve. ECCV. 2022

29. Tai Wang, **Xinge Zhu**, Jiangmiao Pang, Dahua Lin. FCOS3D: Fully Convolutional One-Stage Monocular 3D Object Detection. ICCV workshop. 2021. **Best paper award** on the ICCV 3DODI workshop

30. Lin Zhao, Hui Zhou, **Xinge Zhu**, Xiao Song, Hongsheng Li, Wenbing Tao. Lif-seg: Lidar and camera image fusion for 3d lidar semantic segmentation. IEEE Transactions on Multimedia. 2021

31. Xiao Song, Guorun Yang, **Xinge Zhu**, Hui Zhou, Zhe Wang, Jianping Shi. AdaStereo: A Simple and Efficient Approach for Adaptive Stereo Matching. CVPR. 2021

32. Fangzhou Hong, Hui Zhou, **Xinge Zhu**, Hongsheng Li, Ziwei Liu, LiDAR-based Panoptic Segmentation via Dynamic Shifting Network, CVPR. 2021, **rank 1st in LiDAR Panoptic Segmentation of SemanticKITTI**

33. Tai Wang, **Xinge Zhu**, Dahua Lin. Reconfigurable Voxels: A New Representation for LiDAR-Based Point Clouds. CoRL. 2020.

34. Peishan Cong, **Xinge Zhu**, Yuexin Ma. Input-Output Balanced Framework for Long-tailed LiDAR Semantic Segmentation. ICME. 2021

35. Yan Xu, Zhaoyang Huang, Kwan-Yee Lin, **Xinge Zhu**, Jianping Shi, Hujun Bao, Guofeng Zhang, Hongsheng Li. SelfVoxeLO: Self-supervised LiDAR Odometry with Voxel-based Deep Neural Networks. CoRL. 2020

36. Wanli Chen, **Xinge Zhu**, Ruoqi Sun, Junjun He, Ruiyu Li, Xiaoyong Shen, Bei Yu. Tensor Low-Rank Reconstruction for Semantic Segmentation. ECCV. 2020

37. Yan Xu, **Xinge Zhu**, Jianping Shi, Guofeng Zhang, Hujun Bao, Hongsheng Li. Depth Completion from Sparse LiDAR Data with Depth-Normal Constraints. ICCV. 2019.

38. Yang Yi, Feng Ni, Yuexin Ma, **Xinge Zhu**, Yuankai Qi, Riming Qiu, Shijie Zhao, Feng Li, Yongtao Wang. High Performance Gesture Recognition via Effective and Efficient Temporal Modeling. IJCAI. 2019

39. Ceyuan Yang, Zhe Wang, **Xinge Zhu**, Chen Huang, Jianping Shi, Dahua Lin. Pose Guided Human Video Generation. ECCV. 2018

40. Yuexin Ma, **Xinge Zhu**, Yujing Sun, Bingzheng Yan. Image tagging by joint deep visual-semantic propagation. PCM. 2017. Best paper candidate, 5/340