Yuexin Ma

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Homepage

Google scholar

·Work Experience·

- 09. 2020 – present **ShanghaiTech University**
  Assistant Professor/Researcher/Ph.D. Advisor
  in School of Information Science and Technology
- 10. 2019 – 09.2020 **Hong Kong Baptist University**
  Research Assistant Professor in the Department of Computer Science

·Education·

- 08. 2015 – 08. 2019 **The University of Hong Kong (HKU)**
  PhD in Computer Science
  Supervisor: Prof. Wenping Wang (IEEE/ACM Fellow)
- 09. 2011 – 06. 2015 **Shandong University (SDU)**
  Bachelor's degree in Software Engineering

·Research Interest·

Computer Vision, 3D Scene Understanding, Multimodal Learning, Autonomous Driving

·Research Experience·

- Robotic and Autonomous Driving Lab (RAL) of Baidu
  Advisor: Ruigang Yang (Chief Scientist and Head of Baidu RAL)
  Internship 04.2018 - 12.2018
- The University of North Carolina at Chapel Hill (UNC)
  Advisor: Dinesh Manocha (ACM Fellow, IEEE Fellow, AAAS Fellow, AAAI Fellow)
  Visiting Scholar 09.2017 - 02.2018
- French Institute for Research in Computer Science and Automation (INRIA)
  Advisor: Sylvain Lefebvre (Researcher of INRIA)
  Visiting Scholar 06.2016 - 08.2016

·Teaching·

- Computer Graphics II
- Introduction to Programming
- Smart Vehicles

·Funding·

- Natural Science Foundation of China (NSFC), No.62206173
- Shanghai Sailing Program, No.22YF1428700

·Publication·

(*** indicates co-first author or corresponding author**)

- 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. *International Conference on Computer Vision (ICCV)*, 2023
- Yiteng Xu, Peishan Cong, Yichen Yao, Runnan Chen, Yuenan Hou, Xinge Zhu, Xuming He, Jingyi Yu, **Yuexin Ma***. Human-centric Scene Understanding in 3D Large-scale Scenarios. *International Conference on Computer Vision (ICCV)*, 2023
- Lingdong Kong, Youquan Liu, Runnan Chen, **Yuexin Ma**, Xinge Zhu, Yuenan Hou, Yikang Li, Yu Qiao, Ziwei Liu. Rethinking Range View Representation for LiDAR Segmentation. *International Conference on Computer Vision (ICCV)*, 2023
- Youquan Liu, Runnan Chen, Xin Li, Lingdong Kong, Yuchen Yang, Zhaoyang Xia, Yeqi Bai, Xinge Zhu, **Yuexin Ma**, Yikang Li, Yuenan Hou, Yu Qiao. UniSeg: A Unified Multi-Modal LiDAR Segmentation Network and the OpenPCSeg Codebase. *International Conference on Computer Vision (ICCV)*, 2023
- Xiangze Jia, Hui Zhou, Xinge Zhu, Yandong Guo, Ji Zhang, **Yuexin Ma***. ContrastMotion: Self-supervised Scene Motion Learning for Large-Scale LiDAR Point Clouds. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2023
- Xidong Peng, Xinge Zhu, **Yuexin Ma***. CL3D: Unsupervised Domain Adaptation for Cross-LiDAR 3D Detection. *Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
- Peishan Cong, Yiteng Xu, Yiming Ren, Juze Zhang, Lan Xu, Jingya Wang, Jingyi Yu, **Yuexin Ma***. Weakly Supervised 3D Multi-person Pose Estimation for Large-scale Scenes based on Monocular Camera and Single LiDAR. *Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
- Juze Zhang, Ye Shi, **Yuexin Ma**, Lan Xu, Jingyi Yu, Jingya Wang. IKOL: Inverse kinematics optimization layer for 3D human pose and shape estimation via Gauss-Newton differentiation. *Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
- Yiming Ren, Chengfeng Zhao, Yannan He, Peishan Cong, Han Liang, Jingyi Yu, Lan Xu*, and **Yuexin Ma***. LiDAR-aid Inertial Poser: Large-scale Human Motion Capture by Sparse Inertial and LiDAR Sensors. *IEEE Transactions on Visualization and Computer Graphics (TVCG), 2023*
- Huitong Yang, Xuyang Bai, Xinge Zhu, and **Yuexin Ma***. One Training for Multiple Deployments: Polar-based Adaptive BEV Perception for Autonomous Driving. *International Conference on Robotics and Automation (ICRA), 2023*
- 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. *International Conference on Robotics and Automation (ICRA), 2023*
- Ming Yan, Xin Wang, Yudi Dai, Siqi Shen, Chenglu Wen, Lan Xu, **Yuexin Ma**, Cheng Wang. CIMI4D: A Large Multimodal Climbing Motion Dataset under Human-scene Interactions. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023*
- Yudi Dai, YiTai Lin, XiPing Lin, Chenglu Wen, Lan Xu, Hongwei Yi, Siqi Shen, **Yuexin Ma**, Cheng Wang. SLOPER4D: A Scene-Aware Dataset For Global 4D Human Pose Estimation In Urban Environments. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023*
- Zhaoyang Xia, Youquan Liu, Xin Li, Xinge Zhu, **Yuexin Ma**, Yikang LI, Yuenan Hou, Yu Qiao. SCPNet: Semantic Scene Completion on Point Cloud. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023*

- 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. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023*

- 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. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022*

- Yudi Dai, Yitai Lin, Chenglu Wen, Siqi Shen, Lan Xu, Jingyi Yu, **Yuexin Ma**, Cheng Wang. HSC4D: Human-centered 4D Scene Capture in Large-scale Indoor-outdoor Space Using Wearable IMUs and LiDAR. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022*

- Jialian Li, Jingyi Zhang, Zhiyong Wang, Siqi Shen, Chenglu Wen, **Yuexin Ma**, Lan Xu, Jingyi Yu, Cheng Wang. LiDARCap: Long-range Marker-less 3D Human Motion Capture with LiDAR Point Clouds. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022*

- Yuenan Hou, Xinge Zhu, **Yuexin Ma**, Chen Change Loy, Yikang Li. Point-to-Voxel Knowledge Distillation for LiDAR Semantic Segmentation. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022*

- Runnan Chen, **Yuexin Ma**, Nenglun Chen, Lingjie Liu, Zhiming Cui, Yanhong Lin, Wenping Wang. Structure-Aware Long Short-Term Memory Network for 3D Cephalometric Landmark Detection. *IEEE Transactions on Medical Imaging (TMI), 2022*

- Yuwei Li, Longwen Zhang, Zesong Qiu, Yingwenqi Jiang, Nianyi Li, **Yuexin Ma**, Yuyao Zhang, Lan Xu, Jingyi Yu. NIMBLE: a non-rigid hand model with bones and muscles. *ACM Transactions on Graphics (TOG), 2022*

- Keke Tang, **Yuexin Ma**, Dingruibo Miao, Peng Song, Zhaoquan Gu, Zhihong Tian, Wenping Wang. Decision fusion networks for image classification. *IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2022*

- Yiming Ren, Peishan Cong, Xinge Zhu, **Yuexin Ma***. Self-supervised Point Cloud Completion on Real Traffic Scenes via Scene-concerned Bottom-up Mechanism. *IEEE International Conference on Multimedia and Expo (ICME), 2022*

- Xidong Peng, Xinge Zhu, **Yuexin Ma***. SIDE: Center-based Stereo 3D Detector with Structure-awareInstance Depth Estimation. *Winter Conference on Applications of Computer Vision (WACV), 2022*

- 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 (IJCV), 2022.*

- 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* (*TPAMI), 2021*

- Xin Chen, Anqi Pang, Wei Yang, **Yuexin Ma**, Lan Xu and Jingyi Yu. SportsCap: Monocular 3D Human Motion Capture and Fine-grained Understanding in Challenging Sports Videos. *International Journal of Computer Vision (IJCV), 2021.*

- Xin Chen, Anqi Pang, Wei Yang, **Yuexin Ma**, Lan Xu and Jingyi Yu. TightCap: 3D Human Shape Capture with Clothing Tightness. *ACM Transactions of Graphics (TOG), 2021.*

- Peishan Cong, Xinge Zhu, **Yuexin Ma***. Input-Output Balanced Framework for Long-tailed LiDAR Semantic Segmentation. *IEEE International Conference on Multimedia and Expo (ICME), 2021*

- Yannan He, Anqi Pang, Xin Chen, Han Liang, Minye Wu, **Yuexin Ma**, Lan Xu. ChallenCap: Monocular 3D Capture of Challenging Human Performances using Multi-Modal References. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Oral, 2021*

- 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. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Oral, 2021*

- Weixiang Yang, Qi Li, Wenxi Liu, Yuanlong Yu, **Yuexin Ma**, Shengfeng He, Jia Pan. Projecting Your View Attentively: Monocular Road Scene Layout Estimation via Cross-view Transformation. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021*

- Runnan Chen, **Yuexin Ma**, Lingjie Liu, Nenglun Chen, Zhiming Cui, Guodong Wei, Wenping Wang. Semi-supervised Anatomical Landmark Detection via Shape-regulated Self-training. *Neurocomputing, 2021*

- **Yuexin Ma***, Xinge zhu*, Xinjing Cheng, Ruigang Yang, Jiming Liu, Dinesh Manocha. AutoTrajectory: Label-free Trajectory Extraction and Prediction from Videos using Dynamic Points. *European Conference on Computer Vision (ECCV)*, 2020

- Xinge Zhu, **Yuexin Ma**, Tai Wang, Yan Xu, Jianping Shi, Dahua Lin. SSN: Shape Signature Networks for Multi-class Object Detection from Point Clouds. *European Conference on Computer Vision (ECCV)*, 2020

- Wei Li, Chengwei Pan, Rong Zhang, Jiaping Ren, **Yuexin Ma**, Jin Fang, Feilong Yan, Qichuan Geng, Xinyu Huang, Huajun Gong, Weiwei Xu, Guoping Wang, Dinesh Manocha, Ruigang Yang. AADS: Augmented Autonomous Driving Simulation using Data-driven Algorithms. ***Science Robotics**, 2019*

- **Yuexin Ma**, Xinge Zhu, Sibo Zhang, Ruigang Yang, Wenping Wang, Dinesh Manocha. TrafficPredict: Trajectory Prediction for Heterogeneous Traffic-Agents. *AAAI Conference on Artificial Intelligence (AAAI), Oral, 2019*

- Runnan Chen, **Yuexin Ma**, Nenglun Chen, Daniel Lee, Wenping Wang. Cephalometric Landmark Detection by Attentive Feature Pyramid Fusion and Regression-Voting. *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2019*

- 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. *International Joint Conference on Artificial Intelligence (IJCAI), 2019*

- Yiling Pan, Bin Wang, Xiaohu Guo, Hua Zeng, **Yuexin Ma**, Wenping Wang. Q-MAT+: an Error-Controllable and Feature-Sensitive Simplification Algorithm for Medial Axis Transform. *International Conference on Geometric Modeling and Processing (GMP), 2019*

- **Yuexin Ma**, Dinesh Manocha, Wenping Wang. Efficient Reciprocal Collision Avoidance with Heterogeneous Agents Using CTMAT. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS), Oral, 2018*

- **Yuexin Ma**, Dinesh Manocha, Wenping Wang. AutoRVO: Local Navigation with Dynamic Constraints in Dense Heterogeneous Traffic. *ACM Computer Science in Cars Symposium (CSCS), 2018*

- **Yuexin Ma,** Zhonggui Chen, Wenchao Hu, Wenping Wang. Packing Irregular Objects in 3D Space via Hybrid Optimization. *Symposium on Geometry Processing (SGP), 2018*

- Weikai Chen*, **Yuexin Ma***, Sylvain Lefebvre, Shiqing Xin, Jonàs Martínez, Wenping Wang. Fabricable Tile Decors. ACM Transactions on Graphics (TOG), 36(6), 2017.

- **Yuexin Ma**, Xinge Zhu, Yujing Sun, Bingzheng Yan. Image Tagging by Joint Deep Visual-Semantic

Propagation. *Pacific-Rim Conference on Multimedia (PCM), 2017,*

·Academic Service·

- Reviewer of CVPR, ICCV, ECCV, AAAI, IJCAI, MICCAI, CVM, and IEEE Transactions on Intelligent Transportation Systems
- Challenge Chair of CVPR Workshop of Autonomous Driving 2019

·Invited Talk·

- CCF&CAAI Robot Intelligence Seminar, 2020
- HKSAIR AAAI-19 sharing forum, Hong Kong, 2019
- Department of Computer Science of Shandong University, Qingdao, 2018
- Chinagraph, Guangzhou, 2018
- IEEE Intelligent Vehicle Symposium, Changshu, 2018

·Honor·

- Outstanding Individual of Baidu RAL 2018
- Best Tutor of the University of Hong Kong 2016
- Hong Kong PhD Fellowship Award (HKPFS) 2015
- Presidential Scholarship of Shandong University 2015
- Google Merit Scholarship 2014
- CCF (China Computer Federation) Top 100 Outstanding Undergraduates of China 2013
- National Scholarship of China 2013,2014