YUE WANG

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CURRENT POSITION

University of Southern California **Aug. 2023 -**
Assistant Professor

Nvidia Research **Sep. 2022 - Now**
Research Scientist

EDUCATION

Massachusetts Institute of Technology **Sep. 2017 - June 2022**
Ph.D. Student in Computer Science ***Advisor: Prof. Justin Solomon***

- **Dissertation: "Learning 3D Representations from Data"**
- **Nvidia Fellowship, David S. Y. Wong Fellowship**
- **GPA: 5.0/5.0**

The University of California, San Diego **Sep. 2015 - Dec. 2016**
M.S. in Computer Science

- **GPA: 3.97/4.0**

Zhejiang University **Sep. 2011 - June 2015**
B.E. in Computer Science

- **National Scholarship, Exchange Student Scholarship (Hong Kong University)**
- **GPA: 3.92/4.0**

HONORS AND AWARDS

Google Research Gift, 2023

Best Paper Award (a.k.a Science of Frontiers Award, four awardee worldwide in Graphics & Geometric Computing), Inaugural International Congress on Basic Science, 2023

The first place recipient of the William A. Martin Master's Thesis Award, 2021, MIT EECS

Nvidia Fellowship (five awardee worldwide), 2020, Nvidia

David S. Y. Wong Fellowship, 2017-2018, MIT

National Scholarship (2%), 2011-2012, 2012-2013, Ministry of Education of People's Republic of China

First-Class Scholarship for Outstanding Merits (3%), 2011-2012, 2012-2013, 2013-2014, Zhejiang University

Excellent Student Awards, 2011-2012, 2012-2013, Zhejiang University

PUBLICATIONS

PREPRINT

23. Jiawei Yang, Boris Ivanovic, Or Litany, Xinshuo Weng, Seung Wook Kim, Boyi Li, Tong Che, Danfei Xu, Sanja Fidler, Marco Pavone, Yue Wang. "EmerNeRF: Emergent Spatial-Temporal Scene Decomposition via Self-Supervision." *In submission*, 2023.[link]

22. Jiageng Mao, Yuxi Qian, Hang Zhao, Yue Wang. "GPT-Driver: Learning to Drive with GPT." *In submission*, 2023.[link]

JOURNAL

21. [AJ'21] Jun E. Yin, Daniel J. Eisenstein, Douglas P. Finkbeiner, Christopher W. Stubbs, and Yue Wang. "Active Optical Control with Machine Learning: A Proof of Concept for the Vera C. Rubin Observatory." *The Astronomical Journal*, 2021. [link]

20. [TOG'19] Yue Wang, Yongbin Sun, Ziwei Liu, Sanjay E. Sarma, Michael M. Bronstein and Justin M. Solomon. "Dynamic Graph CNN for Learning on Point Clouds." *ACM Transactions on Graphics*, 2019. [link]

CONFERENCE

19. [CORL' 23] Liangtao Zheng, Yicheng Liu, Yue Wang, and Hang Zhao . "Cross-Dataset Sensor Alignment: Making Visual 3D Object Detector Generalizable." *Conference on Robot Learning*, 2023.[link]

18. [NeurIPS' 23] Xiaoyu Tian, Tao Jiang, Longfei Yun, Yucheng Mao, Huitong Yang, Yue Wang, Yilun Wang, Hang Zhao. "Occ3D: A Large-Scale 3D Occupancy Prediction Benchmark for Autonomous Driving." *Conference on Neural Information Processing Systems, Datasets and Benchmarks Track*, 2023.[link]

17. [CVPR' 23] Jiawei Yang, Marco Pavone, Yue Wang. "FreeNeRF: Improving Few-shot Neural Rendering with Free Frequency Regularization." *Conference on Computer Vision and Pattern Recognition*, 2023.[link]

16. [CORL' 22] Yiming Li, Juexiao Zhang, Dekun Ma, Yue Wang, and Chen Feng . "Self-Supervised Collaborative Scene Completion: Towards Task-Agnostic Multi-Robot Perception." *Conference on Robot Learning*, 2022.[link]

15. [CORL' 22] Xiangru Huang, Yue Wang, Vitor Campagnolo Guizilini, Rares Andrei Ambrus, Adrien Gaidon, and Justin Solomon . "Representation Learning for Object Detection from Unlabeled Point Cloud Sequences." *Conference on Robot Learning*, 2022.[link]

14. [ICRA' 22] Qi Li*, Yue Wang*, Yilun Wang, Hang Zhao . "Hdmapnet: An Online HD Map Construction and Evaluation Framework ." *International Conference on Robotics and Automation* , 2022.[link]

13. [NeurIPS' 21] Yue Wang and Justin Solomon. "Object DGCNN: 3D Object Detection using Dynamic Graphs." *Conference on Neural Information Processing Systems*, 2021.[link]

12. [CORL' 21] Yue Wang, Vitor Guizilini, Tianyuan Zhang, Yilun Wang, Hang Zhao, and Justin Solomon. "DETR3D: 3D Object Detection from Multi-view Images via 3D-to-2D Queries." *Conference on Robot Learning*, 2021.[link]

11. [ICCV' 21] Tianyu Hua, Wenxiao Wang, Zihui Xue, Sucheng Ren, Yue Wang, and Hang Zhao. "On Feature Decorrelation in Self-Supervised Learning." *International Conference on Computer Vision*, 2021.[link]

10. [IROS' 21] Jiahui Fu, Qiangqiang Huang, Kevin Doherty, Yue Wang, and John J. Leonard. "A Multi-Hypothesis Approach to Pose Ambiguity in Object-Based SLAM." *International Conference on Intelligent Robots and Systems*, 2021.[link]

9. [ECCV' 20] Yue Wang, Alireza Fathi, Abhijit Kundu, David A. Ross, Caroline Pantofaru, Thomas A. Funkhouser, Justin M. Solomon. "Pillar-based Object Detection for Autonomous Driving." *European Conference on Computer Vision*, 2020.[link]
8. [ECCV' 20] Yonglong Tian*, Yue Wang*, Dilip Krishnan, Joshua B. Tenenbaum, Phillip Isola. "Rethinking Few-Shot Image Classification: A Good Embedding Is All You Need?." *European Conference on Computer Vision*, 2020.[link]
7. [WACV'20]Yongbin Sun, Yue Wang, Ziwei Liu, Joshua E Siegel and Sanjay E Sarma. "PointGrow: Autoregressively Learned Point Cloud Generation with Self-attention ." *Winter Conference on Applications of Computer Vision*, 2020.[link]
6. [NeurIPS'19] Yue Wang and Justin M. Solomon. "PRNet: Self-Supervised Learning for Partial-to-Partial Registration." *Conference on Neural Information Processing Systems*, 2019. [link]
5. [ICCV'19] Yue Wang and Justin M. Solomon. "Deep Closest Point: Learning Representations for Point Cloud Registration." *International Conference on Computer Vision*, 2019. [link]

WORKSHOP

4. Sihan Liu* and Yue Wang*. "Few-shot Learning with Online Self-Distillation." *2nd Visual Inductive Priors for Data-Efficient Deep Learning Workshop at the International Conference on Computer Vision* , 2021.[link]
3. Qi Li*, Yue Wang*, Yilun Wang, Hang Zhao . "HDMapNet: An Online HD Map Construction and Evaluation Framework." *Best Paper Nomination*, Workshop on Autonomous Driving: Perception, Prediction and Planning.2021[link]
2. Jun E. Yin, Daniel J. Eisenstein, Douglas P. Finkbeiner, Christopher W. Stubbs, and Yue Wang. "Active Optical Control with Machine Learning: A Proof of Concept for the Vera C. Rubin Observatory." *Workshop on Machine Learning and the Physical Sciences at the Neural Information Processing Systems*, 2021. [link]
1. Yue Wang, Alireza Fathi, Jiajun Wu, Thomas A. Funkhouser, Justin M. Solomon. "Multi-Frame to Single-Frame: Knowledge Distillation for 3D Object Detection." *Workshop on Perception for Autonomous Driving at the European Conference on Computer Vision*, 2020.[link]

TEACHING EXPERIENCES

- Teaching Instructor at USC: CSCI677 (Advanced Computer Vision), Fall 2023
- Teaching Assistant at MIT: 6.819/6.869 (Advances in Computer Vision), Fall 2018

INDUSTRIAL EXPERIENCES

Nvidia Research — 2020 Summer
Research Intern — *Host: Dr. Benjamin Eckart & Dr. Chris Choy*
- Semi-supervised object detection from point clouds.

Google Research — 2019 Summer & 2019 Fall & 2020 Spring
Student Researcher — *Host: Prof. Tom Funkhouser & Dr. Alireza Fathi*
- Self-supervised representation learning from point clouds and 3D object detection.

Google — 2017 Spring & Summer
Software Engineer
- Monitoring tools for search frontend.

ACADEMIC SERVICES

- **Leader organizer for the ICCV23' "Neural Fields for Autonomous Driving and Robotics" workshop.**
- **Leader organizer for the CVPR23' "Vision Centric Autonomous Driving" workshop.**
- **SIGGRAPH Research Career Development Committee (Undegraduate Mentoring)**
- **Reviewer for the following conferences: NeurIPS 22', CORL 22', ECCV 22', CVPR 22', ICLR'21, NeurIPS'21, CVPR'21, SIGGRAPH Asia'20, SIGGRAPH'20, NeurIPS'20, ECCV'20, CVPR'20, CVPR'19, ICCV'19, NeurIPS'19, ICML'19 and UAI'19.**

INVITED TALKS

- **"Towards Scalable Autonomous Driving", online, IV2023**
- **"What Makes Good 3D Representations for Autonomous Driving and Robotics?", ETH, May 2023**
- **"Learning 3D Representations with Minimal Supervision", Toyota Research, June 2022**
- **"Learning 3D Representations with Minimal Supervision", Nvidia Research, June 2022**
- **"Learning 3D Representations with Minimal Supervision", NYU, April 2022**
- **"Learning 3D Representations with Minimal Supervision", Yale, March 2022**
- **"Learning 3D Representations with Minimal Supervision", USC, March 2022**
- **"Learning 3D Representations with Minimal Supervision", Cornell, March 2022**
- **"Learning 3D Representations with Minimal Supervision", NUS, Janurary 2022**
- **"Learning 3D Representations with Minimal Supervision", Tsinghua, Janurary 2022**
- **"Learning 3D Representations with Minimal Supervision", Brown, November 2021**
- **"Deep Learning Framework and Code Implementation for Point Cloud Models", online, CVPR 2021**

MENTORING

- **PhD students: Jiawei Yang, Jiageng Mao, Emily Jia, Junjie Ye**
- **Master students: Jonathan Zamora**
- **Undergraduate students: Xander Hinrichsen, James Qian**