

Jianren Wang

🌐 jianrenw.com ✉ jianrenwang.cs@gmail.com 📞 [jianrenw](https://www.linkedin.com/company/jianrenw) 📠 412-626-1560

Education

Carnegie Mellon University

- Ph.D. in Robotics

Pittsburgh, PA

Aug. 2022 - Present

Carnegie Mellon University

- Master of Science in Robotics
- GPA: 4.0/4.0
- Advisor: Prof. Abhinav Gupta

Pittsburgh, PA

Aug. 2020 - Aug. 2022

Carnegie Mellon University

- Master of Science in Mechanical Engineering
- GPA: 4.0/4.0
- Advisor: Prof. Hang Zhao

Pittsburgh, PA

Aug. 2017 - May 2018

Shanghai Jiao Tong University

- B.S. (Summa Cum Laude) in Ocean Engineering
- GPA: 4.0/4.0
- Valedictorian of 2017
- Advisor: Prof. Peter Shull

Shanghai, China

Jun. 2013 - Jun. 2017

Johns Hopkins University

- Visiting-Exchange of Whiting School of Engineering, Computer Science
- Advisors: Prof. Peter Kazanzides, Prof. Russell H. Taylor

Baltimore, MD

Jan. 2016 - May 2016

Internship

Carnegie Mellon University

- Research Associate, Robotics Institute, School of Computer Science
- Research on perception for autonomous driving
- Advisor: Prof. David Held

Pittsburgh, PA

Aug. 2018 - Dec. 2020

Johns Hopkins University

- Research Associate, Department of Computer Science
- Research on medical robotics and augmented reality
- Advisors: Prof. Peter Kazanzides, Prof. Russell H. Taylor

Baltimore, MD

May 2016 - Sep. 2016

Research Interests

My research interests lie in the general area of robotics, computer vision and artificial intelligence. In particular, I am interested in building exceptional robots that enrich people's lives. I believe incorporating cultural knowledge for robots will play a vital role in achieving this goal.

Publications ([Google Scholar Profile](#))

[Preprints and in submissions](#).....

Learning to Manipulate from Passive Videos

- **Jianren Wang**, Sudeep Dasari, Shubham Tulsiani, Abhinav Gupta

2022.....

SEMI: Self-Supervised Exploration via Multisensory Incongruity

- Jianren Wang, Ziwen Zhuang, Hang Zhao
- *IEEE International Conference on Robotics and Automation IRCA 2022*

Molecular Contrastive Learning of Representations via Graph Neural Networks

- Yuyang Wang, Jianren Wang, Zhonglin Cao, Amir Barati Farimani
- *Nature Machine Intelligence*

2021.....

RB2: Robotics Benchmarking with a Twist

- Sudeep Dasari, Jianren Wang, Joyce Hong, Shikhar Bahl, Yixin Lin, Austin Wang, Abitha Thankaraj, Karanbir Chahal, Berk Calli, Saurabh Gupta, David Held, Lerrel Pinto, Deepak Pathak, Vikash Kumar, Abhinav Gupta
- *2021 Conference on Neural Information Processing Systems NeurIPS 2021*

Semi-supervised 3D Object Detection via Temporal Graph Neural Networks

- Jianren Wang, Haiming Gang, Siddharth Ancha, Yi-Ting Chen, David Held
- *2021 International Conference on 3D Vision 3DV 2021*

Adversarial Robust Imitation Learning

- Jianren Wang, Ziwen Zhuang, Yuyang Wang, Hang Zhao
- *2021 Conference on Robot Learning CoRL 2021*

Wanderlust: Online Continual Object Detection in the Real World

- Jianren Wang, Xin Wang, Yue Shang-Guan, Abhinav Gupta
- *2021 International Conference on Computer Vision ICCV 2021*

2020.....

CLOUD: Contrastive Learning of Unsupervised Dynamics

- Jianren Wang*, Yujie Lu*, Hang Zhao (*Equal contribution)
- *2020 Conference on Robot Learning CoRL 2020*

Inverting the Forecasting Pipeline with SPF2: Sequential Pointcloud Forecasting for Sequential Pose Forecasting

- Xinshuo Weng, Jianren Wang, Sergey Levine, Kris M. Kitani, Nicholas Rhinehart
- *2020 Conference on Robot Learning CoRL 2020*

PanoNet3D: Combining Semantic and Geometric Understanding for LiDAR Point Cloud Detection

- Xia Chen, Jianren Wang, David Held, Martial Hebert
- *International Virtual Conference on 3D Vision 2020 3DV2020*

GSIR: Generalizable 3D Shape Interpretation and Reconstruction

- Jianren Wang, Zhaoyuan Fang
- *2020 The European Conference on Computer Vision (ECCV) ECCV2020*

3D Multi-Object Tracking: A Baseline and New Evaluation Metrics

- Xinshuo Weng, Jianren Wang, David Held, Kris M. Kitani
- *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems IROS 2020*

Motion Prediction in Visual Object Tracking

- Jianren Wang*, Yihui He* (*Equal contribution)
- *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems IROS 2020*

Uncertainty-aware Self-supervised 3D Data Association

- Jianren Wang, Siddharth Ancha, Yi-Ting Chen, David Held
- *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems IROS 2020*

Deep Mixture Density Network for Object Detection under Occlusion

- Yihui He*, **Jianren Wang*** (*Equal contribution)
- *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems IROS 2020*

AlignNet: A Unifying Approach to Audio-Visual Alignment

- **Jianren Wang***, Zhaoyuan Fang*, Hang Zhao (*Equal contribution)
- *In Proceedings of the 20th IEEE Winter Conference on Applications of Computer Vision WACV 2020*

PanoNet: Real-time Panoptic Segmentation through Position-Sensitive Feature Embedding

- Xia Chen, **Jianren Wang**, Martial Hebert

2019.....

Physics-Aware 3D Mesh Synthesis

- **Jianren Wang**, Yihui He
- *In Proceedings of 2019 International Conference on 3D Vision 3DV 2019*

Depth-wise Decomposition for Accelerating Separable Convolutions in Efficient Convolutional Neural Networks

- Yihui He*, Jianing Qian*, **Jianren Wang** (*Equal contribution)
- *In Proceedings of 3rd International Workshop on Compact and Efficient Feature Representation and Learning in Computer Vision CVPR 2019 Workshop*

Bounding Box Regression with Uncertainty for Accurate Object Detection

- Yihui He, Chenchen Zhu, **Jianren Wang**, Marios Savvides, Xiangyu Zhang
- *In Proceedings of 37th IEEE/CVF Conference on Computer Vision and Pattern Recognition CVPR 2019*

Ancient - 2018.....

Vertical Jump Height Estimation Algorithm Based on Takeoff and Landing Identification Via Foot-Worn Inertial Sensing

- **Jianren Wang**, Junkai Xu, Peter B Shull
- *2018 Journal of biomechanical engineering*

Integration of a Low-Cost Three-Axis Sensor for Robot Force Control

- Shuyang Chen, **Jianren Wang**, Peter Kazanzides
- *In Proceedings of 2018 Second IEEE International Conference on Robotic Computing*

Validation of a Smart Shoe for Estimating Foot Progression Angle during Walking Gait

- Haisheng Xia, Junkai Xu, **Jianren Wang**, Michael A Hunt, Peter B Shull
- *2017 Journal of biomechanics*

Prioritization and Static Error Compensation for Multi-camera Collaborative Tracking in Augmented Reality

- **Jianren Wang**, Long Qian, Ehsan Azimi, Peter Kazanzides
- *In Proceedings of 2017 IEEE Virtual Reality*

Honors and Awards

- **Excellent Engineer Honor Degree of B.Sc in Naval Architecture and Ocean Engineering**, Shanghai Jiao Tong University. 2017
- **Best Bachelor Theses of Shanghai Jiao Tong University (1%)**. 2017
- **China National Scholarship (0.2%)**. 2014, 2015, 2016
- **First Prize in China Undergraduate Mathematics Competitions**, Shanghai Division, 2014
- **First Prize in China Undergraduate Physics Competitions**, Shanghai Division, 2014

Professional Service

Review paper for:

- The Conference on Robot Learning (CoRL)
- IEEE International Conference on Robotics and Automation (ICRA)
- Conference on Computer Vision and Pattern Recognition (CVPR)
- International Conference on Computer Vision (ICCV)

Additional Experience

- **Drummer**, *Dust (Music Band)*: Invited to *Strawberry Music Festival (top)*, 2014
- **Author**, Published novel “Stones,” *Author Press OL*, 2013

Skills

- **Deep Learning**: PyTorch, TensorFlow, Caffe, MXNet
- **Programming**: Python, C++, C#, Java, Matlab
- **Mechanical**: CAD, CAM, Manufacture
- **Electronics**: Arduino, STM32
- **Robots**: Hello-Robot, Franka, LoCobBot, UR5
- **OS**: Linux, ROS