

## Jian Wang

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HOME PAGE	<a href="https://jianwang-cmu.github.io/">https://jianwang-cmu.github.io/</a>	
RESEARCH INTERESTS	Computational Imaging, Computer Vision, Signal Processing	
EDUCATION	<b>Carnegie Mellon University (CMU)</b> , Pittsburgh, PA	8/2013 to 8/2018
	Ph.D., Electrical and Computer Engineering department	
	<ul style="list-style-type: none"><li>• Thesis: High Resolution 2D Imaging and 3D Scanning with Line Sensors</li><li>• Advisors: Prof. Aswin C. Sankaranarayanan, Prof. Srinivasa Narasimhan</li></ul>	
	<b>University of Science and Technology of China (USTC)</b> , Hefei, China	
	M.S., Pattern Recognition and Intelligent Systems	9/2009 to 7/2013
	<ul style="list-style-type: none"><li>• Advisor: Prof. Zonghai Chen</li></ul>	
	<b>Xi'an Jiao Tong University (XJTU)</b> , Xi'an, China	9/2005 to 7/2009
	B.Eng., Automation department   B.Ec., Finance department (double major)	
WORK EXPERIENCE	<b>Computational Imaging group, Snap Research</b>	8/2018 to present
	Manager: Shree K. Nayar, Guru Krishnan	
	Title: Research Scientist	
	Research topics: visual communication, computational imaging in mobiles (Shree gave a nice keynote about our (unpublished) work in ICCP 2022 which includes my works, <a href="#">video link</a> )	
	<b>Illumination and Imaging Laboratory, CMU</b>	1/2016 to 7/2018
	Advisor: Prof. Srinivasa Narasimhan	
	Title: Research assistant	
	Research topics: 3D sensor in the wild	
	<b>Image Science Lab, CMU</b>	8/2013 to 7/2018
	Advisor: Prof. Aswin C. Sankaranarayanan	
	Title: Research assistant	
	Research topics: video compressive sensing, imaging architecture, camera-projector system, light transport analysis	
	<b>Machine Perception, Google</b>	6/2017 to 12/2017
	Mentors: Dr. Jiawen (Kevin) Chen, Dr. Jon Barron	
	Title: Software Engineering Intern	
	Research topics: dark flash photography, image denoising	
	<b>Media Lab, FutureWei Technologies, Inc.</b>	5/2014 to 8/2014
	Mentor: Dr. Jinwei Gu	
	Title: Research intern	
	Research topics: spatial-temporal graph cuts, multi-camera system	
	<b>Microsoft Research Asia</b>	2/2012 to 2/2013

Mentor: Dr. Yasuyuki Matsushita  
 Title: Research intern  
 Research topics: gigapixel 3D camera, photometric stereo

**Simulation and Intelligent Control Lab, USTC** 9/2009 to 7/2013  
 Advisor: Prof. Zonghai Chen  
 Title: Research assistant  
 Research topics: human action recognition, biometrics, control of intelligent car based on visual sensor, photoelectric sensor, or electromagnetic sensor

TEACHING EXPERIENCE	18792 Advanced Digital Signal Processing, Teaching Assistant	Fall 2016
	16823 Physics-based methods in Computer vision, Teaching Assistant	Spring 2016
	18660 Optimization, Teaching Assistant	Spring 2018
	The National University Freescale Cup Intelligent Car Racing, Coach	2010 to 2011

STUDENT ADVISEES	Tiantian Wang, PhD student, University of California Merced, Fall intern 2021	
	Mohammad Shafiei Rezvani Nezhad, PhD student, University of California San Diego, Summer intern 2021	
	Zhanghao Sun, PhD student, Stanford University, Summer intern 2021	
	Fangzhou Mu, PhD student, University of Wisconsin-Madison, Summer intern 2021	
	Sizhuo Ma, PhD student, University of Wisconsin-Madison, Summer intern 2020	
	Akash Kumar Maity, PhD student, Rice University, Summer intern 2020	
	Byeongjoo Ahn, PhD student, Carnegie Mellon University, Summer intern 2020	
	Yingsi Qin, Undergraduate student, Columbia University, Summer intern 2020	
Wenzheng Chen, PhD Student, University of Toronto, Summer intern 2019		
Jinhui Xiong, PhD student, KAUST, Summer intern 2019		
Vishwanath Saragadam, PhD student, Carnegie Mellon University, Summer intern 2018		

PUBLICATIONS	1. <b>Jian Wang</b> , Zhanghao Sun, Dejia Xu, Mr./Ms. Cool * (* call for collaborators), “Transparent Camera”, presented as a poster in IEEE Conference on Computational Photography ( <b>ICCP</b> ), Pasadena, CA, Aug. 2022 ( <b>Best Poster Award</b> ).
	2. Zhanghao Sun, Yu Zhang, Yicheng Wu, Dong Huo, Yiming Qian, <b>Jian Wang</b> * (* corresponding author), “Structured Light with Redundancy Codes”, arXiv, 2022.
	3. Akash Kumar Maity*, <b>Jian Wang</b> *, Ashutosh Sabharwal and Shree Nayar (* co-first authors), “Camera-Based Robust Heart Rate Monitoring Using Motion Cancellation”, in submission.
	4. Zhaoyi Wan, Dejia Xu, Zhangyang Wang, <b>Jian Wang</b> *, Jiebo Luo* (* co-corresponding authors), “Cloud2Sketch: Augmenting Clouds with Imaginary Sketches”, in ACM Multimedia ( <b>MM</b> ), Lisbon, Portugal, Oct. 2022.
	5. Zhanghao Sun*, <b>Jian Wang</b> *, Yicheng Wu, Shree Nayar (* co-first authors), “Seeing Far in the Dark with Patterned Flash”, in European Conference on Computer Vision ( <b>ECCV</b> ), Tel-Aviv, Israel, Oct. 2022.
	6. Xiong Dun*, Qiang Fu*, Haotian Li*, Tiancheng Sun*, <b>Jian Wang</b> *, Qilin Sun* (* co-first authors), “(Survey) Recent Progress in Computational Imaging”, Journal of Image and Graphics, 2022.
	7. Dong Huo*, <b>Jian Wang</b> *, Yiming Qian, Yee-Hong Yang (* equal contribution), “Glass Segmentation with RGB-Thermal Image Pairs”, arXiv, 2022.

8. Fangzhou Mu, **Jian Wang\***, Yicheng Wu\*, Yin Li\* (\* co-corresponding authors), “3D Photo Stylization: Learning to Generate Stylized Novel Views from a Single Image”, in the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), New Orleans, Louisiana, Jun. 2022 (**Oral**).
9. Jinhui Xiong\*, **Jian Wang\***, Wolfgang Heidrich, Shree Nayar (\* co-first authors), “Seeing in Extra Darkness Using a Deep-red Flash”, in the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021 (**Oral**).
10. Xu Liu, Chengtao Li, **Jian Wang**, Jingbo Wang, Boxin Shi, Xiaodong He, “Group Contextual Encoding for 3D Point Clouds”, in the Thirty-fourth Conference on Neural Information Processing Systems (**NeurIPS**), Dec. 2020.
11. Xu Liu, Jiayan Cao, Qianqian Bi, **Jian Wang**, Boxin Shi, Yicheng Wei, “Dense Point Diffusion for 3D Object Detection”, in International Conference on 3D Vision (**3DV**), Nov. 2020.
12. Vishwanath Saragadam\*, **Jian Wang**, Mohit Gupta, Shree Nayar (\* Summer intern), “Micro-baseline Structured Light”, in International Conference on Computer Vision (**ICCV**), Seoul, South Korea, Oct. 2019.
13. Joseph Bartels, **Jian Wang**, William Whittaker, Srinivasa G. Narasimhan, “Agile Triangulation Light Curtains”, in International Conference on Computer Vision (**ICCV**), Seoul, South Korea, Oct. 2019. (**Oral**)
14. **Jian Wang**, Tianfan Xue, Jonathan T. Barron, Jiawen Chen, “Stereoscopic Dark Flash for Low-light Photography”, in IEEE Conference on Computational Photography (**ICCP**), Tokyo, Japan, May 2019. (**Oral**)
15. **Jian Wang**, “High Resolution 2D Imaging and 3D Scanning with Line Sensors”, PhD thesis, Carnegie Mellon University. 2018.
16. **Jian Wang**, Joseph Bartels, William Whittaker, Aswin C. Sankaranarayanan, Srinivasa G. Narasimhan, “Programmable Triangulation Light Curtains”, in European Conference on Computer Vision (**ECCV**), Munich, Germany, Oct. 2018. (**Oral**)
17. Zhuo Hui, Kalyan Sunkavalli, Joon-Young Lee, Sunil Hadap, **Jian Wang** and Aswin C. Sankaranarayanan, “Reflectance Capture Using Univariate Sampling of BRDFs”, in International Conference on Computer Vision (**ICCV**), Oct. 2017.
18. Vishwanath Saragadam, **Jian Wang**, Xin Li, Aswin C. Sankaranarayanan, “Compressive Spectral Anomaly Detection”, in IEEE Conference on Computational Photography (**ICCP**), Stanford, CA, May 2017. (**Oral**)
19. **Jian Wang**, Aswin C. Sankaranarayanan, Mohit Gupta, and Srinivasa G. Narasimhan, “Dual structured Light 3D Using A 1D Sensor”, in European Conference on Computer Vision (**ECCV**), Amsterdam, The Netherlands, Oct. 2016. (**Oral**)
20. Aswin C. Sankaranarayanan, **Jian Wang**, and Mohit Gupta, “Radon Transform Imaging: Low Cost Video Compressive Sensing at Extreme Resolutions”, in SPIE Sensing and Analysis Technologies for Biomedical and Cognitive Applications, Baltimore, MD, Apr. 2016.
21. **Jian Wang**, Yasuyuki Matsushita, Boxin Shi, and Aswin C. Sankaranarayanan, “Photometric Stereo with Small Angular Variations”, in International Conference on Computer Vision (**ICCV**), Santiago, Chile, Dec. 2015.

22. Suhas Lohit, Kuldeep Kulkarni, Pavan Turaga, **Jian Wang**, and Aswin C. Sankaranarayanan, “Reconstruction-free Inference on Compressive Measurements”, in 4th IEEE International Workshop on Computational Cameras and Displays (**CCD**), Boston, MA, Jun. 2015. (**Oral, Best paper award**)
23. **Jian Wang**, Mohit Gupta, and Aswin C. Sankaranarayanan, “LiSens — A Scalable Architecture for Video Compressive Sensing”, in IEEE Conference on Computational Photography (**ICCP**), Houston, Texas, Apr. 2015. (**Oral**)
24. **Jian Wang**, Xiao Liang, Yasuyuki Matsushita, Magnetron Chen, and Bojun Huang, “Gigapixel 3D Camera”, Tech-report, <https://goo.gl/zVf4x2>, 2015.
25. **Jian Wang**, Zhiling Wang, and Zonghai Chen, “Gender Recognition Based on Hand Waving Action”, Journal of University of Science and Technology of China, vol. 42 (2), pp. 92-98, 2012.
26. **Jian Wang**, Xiaowei Zhang, Jin Yang, Xin Zan, and Xiaoyong Liu, “Design of Control Algorithms for Smart Car Based on Vision”, Microcomputer & Its Applications, vol. 29, pp. 74-77, 2010.

#### PATENTS

1. Srinivasa G. Narasimhan, **Jian Wang**, Aswin C. Sankaranarayanan, Joseph Bartels, William Whittaker, “Programmable light curtains”, US patent, 2021.
2. Shree K. Nayar, **Jian Wang**, “Apparatus having a viewfinder mirror configuration”, US patent, 2020.
3. Tianfan Xue, **Jian Wang**, Jiawen Chen, Jonathan T. Barron, “Dark Flash Photography with a Stereo Camera”, US patent, 2019.
4. Jinwei Gu, **Jian Wang**, Wei Jiang, “Apparatus and Methods for Video Foreground-Background Segmentation with Multi-View Spatial Temporal Graph Cuts”, US patent, 2017.
5. Zonghai Chen, Zhiling Wang, Yuzhou Zhao, Mingwei Guo, and **Jian Wang**, “Ground Target Positioning Method Applied into Video Monitoring System”, China patent CN102359780 B, 2014.
6. **Jian Wang**, Zhiling Wang, Yuzhou Zhao, Mingwei Guo, and Zonghai Chen, “Real-time Identity Recognition and Authentication Method for Self-service Equipment System of Bank”, China patent CN102364527 A, 2012.

#### HONORS AND AWARDS

- Best Poster Award, in IEEE Conference on Computational Photography (**ICCP**) 2022
- Liang Ji-Dian Fellowship 2016
- Best paper award, in 4th IEEE International Workshop on Computational Cameras and Displays (**CCD**) 2015
- Best of the best summer intern good performance award, FutureWei Tech., Inc. 2014
- Award of Excellence, Stars of Tomorrow Internship Program, Microsoft Research Asia 2013
- FutureWei Scholarship (Top 1%) 2010
- Second-Class Award (Top 6.5%)  $\times$  2, in 6th National University Freescale Cup Intelligent Car Racing (as a coach) 2011
- Second-Class Award (Top 8.2%)  $\times$  2 and Excellent Paper Award (Top 3.7%), in 5th National University Freescale Cup Intelligent Car Racing (as a coach) 2010
- First-Class Award (Top 5.6%) and Excellent Paper Award (Top 4.2%), in 4th National University Freescale Cup Intelligent Car Racing 2009

PROFESSIONAL  
SERVICE

- Reviewer for conferences ECCV 2022, ICCP 2022, CVPR 2022, CVPR 2021, ICCP 2021, WACV 2021, ECCV 2020, CVPR 2020, ICCP 2020, ICCV 2019, CVPR 2019, ICCP 2019, PRCV 2019, CCD 2018, ICIP, ICASSP
- Outstanding reviewer for CVPR 2021
- Reviewer for journals IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), International Journal of Computer Vision (IJCV), IEEE Transactions on Image Processing (T-IP), IEEE Transactions on Computational Imaging, IEEE Computer Graphics and Applications, IEEE Transactions on Circuits and Systems for Video Technology (T-CSVT), IPSJ Transactions on Computer Vision and Applications
- Program Committee member for CVPR Workshop on Computational Cameras and Displays (CCD) 2018
- Volunteer for ICCP 2018, 2016