Jian Wang

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Homepage   https://jianwang-cmu.github.io/

Research Interests   Computational Photography, Computer Vision, Signal Processing

Education

Carnegie Mellon University (CMU), Pittsburgh, PA   8/2013 to 8/2018

Ph.D., Electrical and Computer Engineering department
- Thesis title: High Resolution 2D Imaging and 3D Scanning with Line Sensors
- Advisors: Prof. Aswin C. Sankaranarayanan, Prof. Srinivasa Narasimhan

University of Science and Technology of China (USTC), Hefei, China

M.S., Automation department   9/2009 to 7/2013
- Advisor: Prof. Zonghai Chen

Xi'an Jiao Tong University (XJTU), Xi'an, China   9/2005 to 7/2009

B.Eng., Automation department   B.Ec., Finance department (double major)

Work Experience

Computational Imaging group, Snap Research   9/2018 to present
Manager: Shree Nayar
Title: Research Scientist
Research topics: visual communication, structured light

Illumination and Imaging Laboratory, CMU   1/2016 to 7/2018
Advisor: Prof. Srinivasa Narasimhan
Title: Research assistant
Research topics: structured light, time-of-flight sensor, dynamic vision sensor, 3D imaging, non-line-of-sight imaging

Image Science Lab, CMU   8/2013 to 7/2018
Advisor: Prof. Aswin C. Sankaranarayanan
Title: Research assistant
Research topics: video compressive sensing, imaging architecture, optics design, camera-projector system, light transport analysis, photometric stereo, 3D imaging

Machine Perception, Google   6/2017 to 12/2017
Advisor: Dr. Jiawen (Kevin) Chen
Title: Software Engineering Intern
Research topics: dark flash photography, bilateral filtering, stereo matching, image denoising

Media Lab, FutureWei Technologies, Inc.   5/2014 to 8/2014
Advisor: Dr. Jinwei Gu
Title: Research intern
Research topics: video co-segmentation, spatial-temporal graph cuts, multi-camera system

Microsoft Research Asia   2/2012 to 2/2013

Advisor: 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 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

PUBLICATIONS

1. 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.

2. Xu Liu, Jiayan Cao, Qianqian Bi, **Jian Wang**, Boxin Shi, Yicheng Wei, "Group Contextual Encoding for 3D Point Clouds", in International Conference on 3D Vision (**3DV**), Nov. 2020.

3. Vishwanath S. R. Venkata, **Jian Wang**, Mohit Gupta, Shree Nayar, "Micro-baseline Structured Light", in International Conference on Computer Vision (**ICCV**), Seoul, South Korea, Oct. 2019.

4. 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**)

5. **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**)

6. **Jian Wang**, "High Resolution 2D Imaging and 3D Scanning with Line Sensors", PhD thesis, Carnegie Mellon University. 2018.

7. **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**)

8. 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.

9. Vishwanath S. R. Venkata, **Jian Wang**, Xin Li, Aswin C. Sankaranarayanan, "Compressive Spectral Anomaly Detection", in IEEE Conference on Computational Photography (**ICCP**), Stanford, CA, May 2017. (**Oral**)

10. **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**)

11. 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.

12. **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.

13. 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**)

14. **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**)

15. **Jian Wang**, Xiao Liang, Yasuyuki Matsushita, Magnetro Chen, and Bojun Huang, "Gigapixel 3D Camera", Tech-report, `https://goo.gl/zVf4x2`, 2015.

16. **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.

17. **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. Tianfan Xue, **Jian Wang**, Jiawen Chen, Jonathan T. Barron, "Dark Flash Photography with a Stereo Camera", US patent, 2019.

2. 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.

3. **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

- 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 Technologies, Inc.   2014
- Award of Excellance, Stars of Tomorrow Internship Program, Microsoft Research Asia   2013
- Huawei Scholarship (Top 1%)   2010
- Second-Class Award (Top 6.5%), in 6th National University Freescale Cup Intelligent Car Racing   2011
- Second-Class Award (Top 8.2%) and Excellent Paper Award (Top 3.7%), in 5th National University Freescale Cup Intelligent Car Racing   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 WACV 2021, ECCV 2020, CVPR 2020, ICCP 2020, ICCV 2019, CVPR 2019, ICCP 2019, PRCV 2019, CCD 2018, ICIP, ICASSP
- Reviewer for journals IPSJ Transactions on Computer Vision and Applications, IEEE Computer Graphics and Applications, IEEE Transactions on Circuits and Systems for Video Technology (T-CSVT), IEEE Transactions on Image Processing (T-IP)

- Program Committee member for CVPR Workshop on Computational Cameras and Displays (CCD) 2018
- Volunteer for ICCP 2018, 2016