

# Boxin Shi

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CONTACT INFORMATION	Boya Young Scholar Assistant Professor & National 1000 Youth Talents Research Professor School of Electronics Engineering and Computer Science, Peking University Address: Yiheyuan Road No. 5, Haidian District, Beijing, 100871, China Web: <a href="http://shiboxin.com">shiboxin.com</a> E-mail: <a href="mailto:shiboxin@pku.edu.cn">shiboxin@pku.edu.cn</a> Phone: +86-10-62758116
RESEARCH INTERESTS	Computational photography (depth camera, computer vision with alternative sensor, high dynamic range imaging, super resolution, reflection removal) Computer vision (physics-based vision, photometry, reflectance and illumination modeling, 3D vision) Multimedia information processing (object retrieval, video coding, multi-view video, multimedia circuit and system)
EDUCATION	<p><b>The University of Tokyo (UTokyo)</b>, Tokyo, Japan Oct. 2010 – Sep. 2013</p> <ul style="list-style-type: none"><li>• Ph.D. in information science and technology</li><li>• Advisor: Prof. Katsushi Ikeuchi</li><li>• Thesis title: Photometric Stereo for General Reflectance and Lighting</li><li>• GPA: 4.0/4.0</li></ul> <p><b>Peking University (PKU)</b>, Beijing, China Sep. 2007 – Jul. 2010</p> <ul style="list-style-type: none"><li>• Master of Engineering in signal and information processing, with title “Excellent Graduates”</li><li>• Advisor: Prof. Chao Xu</li><li>• GPA: 90.52/100 (3.92/4.0)</li></ul> <p><b>Beijing Univ. of Posts and Telecom. (BUPT)</b>, Beijing, China Sep. 2003 – Jun. 2007</p> <ul style="list-style-type: none"><li>• Bachelor of Engineering in information security, with title “Excellent Graduates”</li><li>• GPA: 88.92/100 (3.83/4.0); Rank (official): 1/57</li></ul>
WORKING EXPERIENCE	<p><b>Department of Computer Science, School of EECS, PKU</b> Nov. 2017 – present</p> <ul style="list-style-type: none"><li>• Principle Investigator of the Camera Intelligence Group</li><li>• Faculty member at Institute of Digital Media (National Engineering Lab for Video Technology)</li><li>• Research topic: Computational photography and computer vision</li></ul> <p><b>Artificial Intelligence Research Center, AIST</b> Apr. 2016 – Nov. 2017</p> <ul style="list-style-type: none"><li>• Group: Living Intelligence Research Team</li><li>• Title: Researcher</li><li>• Research topic: 3D scene understanding for robot and human communication</li></ul> <p><b>Rapid-Rich Object Search (ROSE) Lab, NTU</b> Oct. 2015 – Mar. 2016</p> <ul style="list-style-type: none"><li>• Advisor: Prof. Alex Chichung Kot</li><li>• Title: Research fellow</li><li>• Research topic: Estimating photometric properties for community photo collections</li></ul> <p><b>Vision, Graphics and Computational Design Group, SUTD</b> Oct. 2014 – Oct. 2015</p> <ul style="list-style-type: none"><li>• Advisor: Prof. Sai-Kit Yeung</li><li>• Title: Postdoctoral fellow</li><li>• Research topic: Photometric-based 3D reconstruction using big visual data</li></ul> <p><b>Camera Culture Group, MIT Media Lab</b> Oct. 2013 – Oct. 2014</p> <ul style="list-style-type: none"><li>• Advisor: Prof. Ramesh Raskar</li><li>• Title: Postdoctoral fellow</li><li>• Research topic: Computational imaging with unconventional cameras</li></ul> <p><b>Visual Computing Group, Microsoft Research Asia</b> Jul. 2012 – Oct. 2012</p> <ul style="list-style-type: none"><li>• Advisor: Dr. Yasuyuki Matsushita</li><li>• Title: Research intern</li><li>• Research topic: Photometric stereo with uncontrolled illumination and camera</li></ul> <p><b>Department of ECE, National University of Singapore</b> Jul. 2011 – Oct. 2011</p> <ul style="list-style-type: none"><li>• Advisor: Prof. Ping Tan</li><li>• Title: Research engineer</li><li>• Research topic: Reflectance modeling and radiometric image analysis</li></ul> <p><b>Visual Computing Group, Microsoft Research Asia</b> Jul. 2009 – Sep. 2010</p>

- Advisor: Dr. Yasuyuki Matsushita
- Title: Research intern
- Research topic: Photometric stereo and radiometric calibration

HONORS AND AWARDS	Boya Young Scholar, Peking University	2018
	The Recruitment Program of Global Experts (Youth Program), Chinese government	2017
	Best Paper, ICCV Workshop - Physics Based Vision Meets Deep Learning	2017
	Outstanding Reviewer, IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2017
	Best Overall Venture Pitch, CVPR Workshop - Vision Industry and Entrepreneur	2016
	Best Paper Runner-up, International Conference on Computational Photography (ICCP)	2015
	SUTD-MIT Joint Postdoctoral Fellowship, SUTD	2013-2015
	IEEE CVPR 2013 Doctoral Consortium, IEEE Computer Society	2013
	MEXT Global 30 Scholarship, Japanese government	2010-2013
	Excellent Master Graduates, Peking University	2010
	Excellent Internship “Stars of Tomorrow”, Microsoft Research Asia	2010
	Yang Fuqing & Wang Yangyuan Academician Scholarship, Peking University	2009
	Huang Ying Scholarship, Peking University	2008
	Excellent Graduates in Beijing (top 1%), Education Committee of Beijing	2007
	Excellent Bachelor Thesis (top 2%), Academic Committee of BUPT	2007
	First Prize, Students Creative Award, Academic Committee of BUPT	2007
	National Scholarship (top 1%, Rank 1 student only), Chinese government	2005, 2006
Second Prize, National Undergraduates Electronic Design Competition (Beijing Section)	2005	

## PUBLICATIONS

### International Journal

<sup>†</sup>postdocs/students (co-)supervised; \*corresponding author

- [1] Qian Zheng<sup>†</sup>, Ajay Kumar, **Boxin Shi**, and Gang Pan, “Numerical reflectance compensation for non-Lambertian photometric stereo”, In IEEE Transactions on Image Processing (**TIP**), 2019.
- [2] Huijing Zhan<sup>†\*</sup>, **Boxin Shi**<sup>\*</sup>, Ling-Yu Duan, and Alex C. Kot, “DeepShoe: An improved multi-task view-invariant CNN for street-to-shop shoe retrieval”, In Computer Vision and Image Understanding (**CVIU**), 2019.
- [3] **Boxin Shi**<sup>\*</sup>, Zhipeng Mo<sup>†</sup>, Zhe Wu, Dinglong Duan, Sai-Kit Yeung, and Ping Tan, “A benchmark dataset and evaluation for non-Lambertian and uncalibrated photometric stereo”, In IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), Volume 41, Issue 2, Pages 271-284, 2019.
- [4] Xian-Hua Han, **Boxin Shi**, and Yinqiang Zheng, “Self-similarity constrained sparse representation for hyperspectral image super-resolution”, In IEEE Transactions on Image Processing (**TIP**), Volume 27, Issue 11, Pages 5625-5637, 2018.
- [5] Liang Xie, Yuhua Xu, Xiaohu Zhang, Wei Bao, Chenpeng Tong, and **Boxin Shi**, “A self-calibrated photo-geometric depth camera”, In **Visual Computer**, 2018.
- [6] Renjie Wan<sup>†</sup>, **Boxin Shi**, Ling-Yu Duan, Ah-Hwee Tan, Wen Gao, and Alex C. Kot, “Region-aware reflection removal with unified content and gradient priors”, In IEEE Transactions on Image Processing (**TIP**), Volume 27, Issue 6, Pages 2927-2941, 2018.
- [7] Achuta Kadambi<sup>\*</sup>, Vage Taamazyan, **Boxin Shi**<sup>\*</sup>, and Ramesh Raskar, “Depth sensing using geometrically constrained polarization normals”, In International Journal of Computer Vision (**IJCV**), Volume 125, Issue 1-3, Pages 34-51, 2017. (invited by Special Issue of **Best Papers** from ICCV 2015, 9 out of 1700+).
- [8] Weiwei Wan, **Boxin Shi**, Zijian Wang, and Rui Fukui, “Multi-robot object transport via robust caging”, In IEEE Transactions on System, Man, and Cybernetics: Systems (**TSMC**), 2017.
- [9] Huijing Zhan<sup>†\*</sup>, **Boxin Shi**<sup>\*</sup>, and Alex C. Kot, “Cross-domain shoe retrieval with a semantic hierarchy of attribute classification Network”, In IEEE Transactions on Image Processing (**TIP**), Volume 26, Issue 12, Pages 5867-5881, 2017.
- [10] Achuta Kadambi, Hang Zhao<sup>†</sup>, **Boxin Shi**, and Ramesh Raskar, “Occluded imaging with time of flight sensors”, In ACM Transactions on Graphics (**TOG**), Volume 35, Issue 2, Article No. 15, 2016.
- [11] Si Li and **Boxin Shi**<sup>\*</sup>, “Photometric stereo for general isotropic reflectances by spherical linear interpolation”, In Optical Engineering (**OE**), Volume 54, Issue 8, 083104, 2015.
- [12] Dan Raviv, Wei Zhao, Carrie McKnelly, Athina Papadopoulou, Achuta Kadambi, **Boxin Shi**, Shai Hirsch, Daniel Dikovsky, Mike Zyacki, Carlos Olguin, Ramesh Raskar, and Skylar Tibbits,

“Active printed materials for complex self-evolving deformations”, In **Scientific Reports**, Volume 4, Issue 7422, 2014. (Open access at [nature.com](https://doi.org/10.1038/srep07422), doi:10.1038/srep07422)

- [13] **Boxin Shi**, Ping Tan, Yasuyuki Matsushita, and Katsushi Ikeuchi, “Bi-polynomial modeling of low-frequency reflectances”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Volume 36, Issue 6, Pages 1078-1091, 2014.
- [14] Joon-Young Lee, Yasuyuki Matsushita, **Boxin Shi**, In-So Kweon, and Katsushi Ikeuchi, “Radiometric calibration by rank minimization”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Volume 35, Issue 1, Pages 144-156, 2013.

#### International Conference

- [1] Tianyu Guo<sup>†</sup>, Chang Xu, **Boxin Shi**, Chao Xu, and Dacheng Tao, “Smooth deep image generator from noises”, In Proc. AAAI Conference on Artificial Intelligence (**AAAI**), Honolulu, HI, USA, Jan. 2019.
- [2] Bin He<sup>†</sup>, Feng Gao, Daiqian Ma<sup>†</sup>, **Boxin Shi**, and Ling-Yu Duan, “ChipGAN: A generative adversarial network for Chinese ink wash painting style transfer”, In Proc. ACM Multimedia Conference (**MM**), Seoul, Korea, Oct. 2018.
- [3] Xian-Hua Han, **Boxin Shi**, and Yinqiang Zheng, “SSF-CNN: Spatial and spectral fusion with CNN for hyper-spectral image super-resolution”, In Proc. IEEE International Conference on Image Processing (**ICIP**), Athens, Greece, Oct. 2018.
- [4] Xian-Hua Han, **Boxin Shi**, and Yinqiang Zheng, “Residual HSRCNN: Residual hyper-spectral reconstruction CNN from an RGB Image”, In Proc. International Conference on Pattern Recognition (**ICPR**), Beijing, China, Aug. 2018.
- [5] Zhipeng Mo<sup>†</sup>, **Boxin Shi**<sup>\*</sup>, Feng Lu, Sai-Kit Yeung, and Yasuyuki Matsushita, “Uncalibrated photometric stereo under natural illumination”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Salt Lake City, UT, USA, Jun. 2018.
- [6] Daniel Teo Guangwei<sup>†</sup>, **Boxin Shi**<sup>\*</sup>, Yinqiang Zheng, and Sai-Kit Yeung, “Self-calibrating polarising radiometric calibration”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Salt Lake City, UT, USA, Jun. 2018.
- [7] Renjie Wan<sup>†\*</sup>, **Boxin Shi**<sup>\*</sup>, Ling-Yu Duan, Ah-Hwee Tan, and Alex C. Kot, “CRNN: Multi-scale guided concurrent reflection removal network”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Salt Lake City, UT, USA, Jun. 2018.
- [8] Bing Li, Chia-Wen Lin, **Boxin Shi**, Tiejun Huang, Wen Gao, and C.-C. Jay Kuo, “Depth-aware stereo video retargeting”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Salt Lake City, UT, USA, Jun. 2018.
- [9] Xian-Hua Han, Jian Wang, **Boxin Shi**, Yinqiang Zheng, and Yen-Wei Chen “Hyper-spectral image super-resolution using non-negative spectral representation with data-guided sparsity”, In Proc. IEEE International Symposium on Multimedia (**ISM**), Taichung, Taiwan, Dec. 2017.
- [10] Renjie Wan<sup>†\*</sup>, **Boxin Shi**<sup>\*</sup>, Ling-Yu Duan, Tan Ah Hwee, and Alex C. Kot, “Benchmarking single-image reflection removal algorithms”, In Proc. International Conference on Computer Vision (**ICCV**), Venice, Italy, Oct. 2017.
- [11] Lixiong Chen, Yinqiang Zheng, **Boxin Shi**, Art Subpa-Asa, and Imari Sato, “A microfacet-based reflectance model for photometric stereo with highly specular surfaces”, In Proc. International Conference on Computer Vision (**ICCV**), Venice, Italy, Oct. 2017.
- [12] Hiroaki Santo, Masaki Samejima, Yusuke Sugano, **Boxin Shi**, and Yasuyuki Matsushita, “Deep photometric stereo network”, In Proc. International Conference on Computer Vision (**ICCV**) Workshop PBDL, Venice, Italy, Oct. 2017. (**Best Paper**)
- [13] Huijing Zhan<sup>†</sup>, **Boxin Shi**, and Alex C. Kot, “Street-to-shope shoe retrieval with multi-scale viewpoint invariant triplet network”, In Proc. International Conference on Image Processing (**ICIP**), Beijing, China, Sep. 2017. (Oral)
- [14] Nevrez Imamoglu, Chi Zhang, Yuming Fang, Wataru Shimoda, and **Boxin Shi**, “Saliency detection by forward and backward cues in deep-CNN”, In Proc. International Conference on Image Processing (**ICIP**), Beijing, China, Sep. 2017. (Oral)
- [15] Huijing Zhan<sup>†</sup>, **Boxin Shi**, and Alex C. Kot, “Street-to-shop shoe retrieval”, In Proc. British Machine Vision Conference (**BMVC**), London, UK, Sep. 2017.
- [16] Zhipeng Mo<sup>†</sup>, **Boxin Shi**<sup>\*</sup>, Sai-Kit Yeung, and Yasuyuki Matsushita, “Radiometric calibration for Internet photo collections”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Honolulu, HI, USA, Jul. 2017. (Spotlight)

- [17] Zhaopeng Cui, Jinwei Gu, **Boxin Shi**, Ping Tan, and Jan Kautz, “Polarimetric multi-view stereo”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Honolulu, HI, USA, Jul. 2017.
- [18] Renjie Wan<sup>†</sup>, **Boxin Shi**, Tan Ah Hwee, and Alex C. Kot, “Sparsity based reflection removal using external patches”, In Proc. IEEE International Conference on Multimedia & Expo (**ICME**), Hong Kong, China, Jul. 2017. (Oral)
- [19] Huijing Zhan<sup>†</sup>, **Boxin Shi**, and Alex C. Kot, “Fashion analysis with a subordinate attribute classification network”, In Proc. IEEE International Conference on Multimedia & Expo (**ICME**), Hong Kong, China, Jul. 2017. (Oral)
- [20] Huijing Zhan<sup>†</sup>, **Boxin Shi**, and Alex C. Kot, “Cross-domain show retrieval using a three-level deep feature representation”, In Proc. IEEE International Symposium on Circuits & Systems (**ISCAS**), Baltimore, MD, USA, May. 2017. (Oral)
- [21] Renjie Wan<sup>†</sup>, **Boxin Shi**, Tan Ah Hwee, and Alex C. Kot, “Depth of field guided reflection removal”, In Proc. IEEE International Conference on Image Processing (**ICIP**), Phoenix, AZ, USA, Sep. 2016. (Oral)
- [22] **Boxin Shi**, Zhe Wu, Zhipeng Mo, Dinglong Duan, Sai-Kit Yeung, and Ping Tan, “A benchmark dataset and evaluation for non-Lambertian and uncalibrated photometric stereo”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Las Vegas, NV, USA, Jun. 2016.
- [23] Achuta Kadambi, Vage Taamazyan, **Boxin Shi**, and Ramesh Raskar, “Polarized 3D: High-quality depth sensing with polarization cues”, In Proc. International Conference on Computer Vision (**ICCV**), Santiago, Chile, Dec. 2015. (Oral)
- [24] Jian Wang, Yasuyuki Matsushita, **Boxin Shi**, and Aswin C. Sankaranarayanan, “Photometric stereo with small angular variations”, In Proc. International Conference on Computer Vision (**ICCV**), Santiago, Chile, Dec. 2015.
- [25] Christy Fernandez-Cull, Hang Zhao<sup>†</sup>, **Boxin Shi**, Brian Tyrrell, Joseph Lin, and Ramesh Raskar, “Snapshot on-chip HDR ROIC architectures”, OSA Computational Optical Sensing and Imaging (**COSI**), Arlington, VA, USA, Jun. 2015. (Oral)
- [26] Hang Zhao<sup>†</sup>, **Boxin Shi**<sup>\*</sup>, Christy Fernandez-Cull, Sai-Kit Yeung, and Ramesh Raskar, “Unbounded high dynamic range photography using a modulo camera”, In Proc. International Conference on Computational Photography (**ICCP**), Houston, TX, USA, Apr. 2015. (Oral, **Best paper runner-up**)
- [27] Munehiko Sato, Shigeo Yoshida, Alex Olwal, **Boxin Shi**, Atsushi Hiyama, Tomohiro Tanikawa, Michitaka Hirose, and Ramesh Raskar, “SpecTrans: Versatile material classification for interaction with textureless, specular and transparent surfaces”, In Proc. SIGCHI Conference on Human Factors in Computing Systems (**CHI**), Seoul, Korea, Apr. 2015. (Oral)
- [28] **Boxin Shi**, Kenji Inose, Yasuyuki Matsushita, Ping Tan, Sai-Kit Yeung, and Katsushi Ikeuchi, “Photometric stereo using Internet images”, In Proc. International Conference on 3D Vision (**3DV**), Tokyo, Japan, Dec. 2014.
- [29] R. Hamilton Shepard, Christy Fernandez-Cull, Ramesh Raskar, **Boxin Shi**, Christopher Barsi, and Hang Zhao<sup>†</sup>, “Optical design and characterization of an advanced computational imaging system”, In Proc. SPIE Optics and Photonics for Information Processing VIII, San Diego, CA, USA, Aug. 2014. (Oral)
- [30] **Boxin Shi**, Hang Zhao<sup>†</sup>, Moshe Ben-Ezra, Sai-Kit Yeung, Christy Fernandez-Cull, R. Hamilton Shepard, Christopher Barsi, and Ramesh Raskar, “Sub-pixel layout for super-resolution with images in the octic group”, In Proc. European Conference on Computer Vision (**ECCV**), Zurich, Switzerland, Sep. 2014.
- [31] **Boxin Shi**, Ping Tan, Yasuyuki Matsushita, and Katsushi Ikeuchi, “Elevation angle from reflectance monotonicity: Photometric stereo for general isotropic reflectances”, In Proc. European Conference on Computer Vision (**ECCV**), Florence, Italy, Oct. 2012.
- [32] **Boxin Shi**, Ping Tan, Yasuyuki Matsushita, and Katsushi Ikeuchi, “A biquadratic reflectance model for radiometric image analysis”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Providence, RI, USA, Jun. 2012.
- [33] Joon-Young Lee, **Boxin Shi**, Yasuyuki Matsushita, In-So Kweon, and Katsushi Ikeuchi, “Radiometric calibration by transform invariant low-rank structure”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Colorado Springs, CO, USA, Jun. 2011.
- [34] Lun Wu, Arvind Ganesh, **Boxin Shi**, Yasuyuki Matsushita, Yongtian Wang, and Yi Ma, “Robust photometric stereo via low-rank matrix completion and recovery”, In Proc. Asian Conference on Computer Vision (**ACCV**), Queenstown, New Zealand, Nov. 2010.

- [35] **Boxin Shi**, Yasuyuki Matsushita, Yichen Wei, Chao Xu, and Ping Tan, “Self-calibrating photometric stereo”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), San Francisco, CA, USA, Jun. 2010. (Oral)
- [36] **Boxin Shi**, Yangxi Li, Lin Liu, and Chao Xu, “Color correction and compression for multi-view video using H.264 features”, In Proc. Asian Conference on Computer Vision (**ACCV**), Xi’an, China, Sep. 2009.
- [37] **Boxin Shi**, Yangxi Li, and Chao Xu, “Intrinsic image decomposition using color invariant edge”, In Proc. International Conference on Image and Graphics (**ICIG**), Xi’an, China, Sep. 2009. (Oral)
- [38] Yangxi Li, **Boxin Shi**, and Chao Xu, “Integrating color constancy into multi-view video coding”, In Proc. International Conference on Image and Graphics (**ICIG**), Xi’an, China, Sep. 2009. (Oral)
- [39] **Boxin Shi**, Yangxi Li, Lin Liu, and Chao Xu, “Block-based color correction algorithm for multi-view video coding”, In Proc. IEEE International Conference on Multimedia & Expo (**ICME**), New York city, NY, USA, Jun. 2009. (Oral)
- [40] **Boxin Shi**, Lin Liu, and Chao Xu, “Comparison between JPEG2000 and H.264 for digital cinema”, In Proc. IEEE International Conference on Multimedia & Expo (**ICME**), Hannover, Germany, Jun. 2008.

PATENTS

- [1] Achuta Kadambi, Vage Taamazyan, **Boxin Shi**, and Ramesh Raskar, “United States Patent 20160261844: Methods and apparatus for enhancing depth maps with polarization cues”, Massachusetts Institute of Technology.
- [2] Achuta Kadambi, Hang Zhao, **Boxin Shi**, Ayush Bhandari, and Ramesh Raskar, “United States Patent 20160014393: Methods and apparatus for virtual sensor array”, Massachusetts Institute of Technology.
- [3] Munehiko Sato, Ramesh Raskar, **Boxin Shi**, and Alex Olwal, “United States Patent 20150330905: Methods and apparatus for surface classification”, Massachusetts Institute of Technology.

RESEARCH  
GRANTS

**Photometric Methods in Computer Vision for Unconstrained Internet Photo Collections**  
Principal Investigator, 2019–2022  
NSFC General Program, 61872012, Granted: 650,000 CNY

**Face Relighting under Natural Illumination and Realistic Reflectance**  
Principal Investigator, 2018–2019  
PKU-Tencent Rhino-Bird Research Fund, Granted: 100,000 CNY

**The Recruitment Program of Global Experts (Youth Program)**  
Principal Investigator, 2018–2020  
Start-Up Funding, Granted: 3,000,000 CNY

**Radiometric Calibration for Photo Collections**  
Principal Investigator, 2017–2019  
JSPS KAKENHI (Grant-in-Aid for Young Scientists B), JP17K12722, Granted: 3,250,000 JPY

**Computational Photography**  
Co-Principal Investigator (PI: Prof. Xian-Hua Han), 2017–2018  
Open Collaborative Research at National Institute of Informatics (NII), Granted: 700,000 JPY

**Strategic Advancement of Multi-Purpose Ultra-Human Robot and Artificial Intelligence Technologies (SAMURAI)**  
Participant of 92 Researchers (no ranking), 2015–2017  
New Energy and Industrial Tech. and Dev’t. Organization (NEDO), Granted: 2,063,675,120 JPY

PROFESSIONAL  
ACTIVITIES

**Program Chair**  
ICCV Workshop Physics-based Vision meets Deep Learning (PBDL) 2017

**Area Chair**  
Asian Conference on Computer Vision (ACCV) 2018  
IAPR International Conference on Machine Vision Applications (MVA) 2019, 2017

**Program Committee Member**  
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2019, 2018, 2017, 2016,

2015, IEEE International Conference on Computer Vision (ICCV) 2019, 2017, 2015, European Conference on Computer Vision (ECCV) 2018, AAAI Conference on Artificial Intelligence (AAAI) 2019, International Joint Conference on Artificial Intelligence (IJCAI) 2018, International Conference on Computational Photography (ICCP) 2018, 2017, International Conference on Multimedia & Expo (ICME) 2019, Asian Conference on Computer Vision (ACCV) 2016, 2014, International Conference on 3D Vision (3DV) 2017, 2015, CAD/Graphics 2019, 2015, IEEE International Conference on Advanced Video and Signal-based Surveillance (AVSS) 2015

### Journal Reviewer

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), International Journal of Computer Vision (IJCV), IEEE Transactions on Image Processing (TIP), IEEE Transactions on Visualization and Computer Graphics (TVCG), IEEE Transactions on Multimedia (TMM), IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), IEEE Computer Graphics and Applications (CGA), IEEE Journal of Selected Topics in Signal Processing (JSTSP), ACM Transactions on Intelligent Systems and Technology (TIST), Computer Vision and Image Understanding (CVIU), Optical Express, Sensors, Image and Vision Computing (IVC), Machine Vision and Applications (MVA), Pattern Recognition Letters (PRL), The Visual Computer, SPIE Journal of Electronic Imaging (JEI), EURASIP Journal on Image and Video Processing (JIVP), Signal Processing: Image Communication (SPIC), IPSJ Transactions on Computer Vision and Applications (CVA)

### Conference Reviewer

ACM SIGGRAPH 2016, ACM SIGGRAPH Asia 2015, 2014, Eurographics (EG) 2016, 2014, IEEE International Conference on Computer Vision (ICCV) 2013

### TEACHING EXPERIENCE

#### Course Teaching

Instructor, Integrated Learning Programme–Computing, SUTD	Oct. 2014 – Nov. 2014
Guest lecturer, ISTD 50.572 Graphics & Visualization, SUTD	Sep. 2014 – Dec. 2014
Co-instructor, MAS.132/MAS.532 Mathematical Methods in Imaging, MIT	Feb. 2014 – May 2014
Teaching Assistant, Global Creativity Leader Project, UTokyo	Dec. 2012 – Mar. 2013
Teaching Assistant, Introduction to Computer Science, PKU	Sep. 2008 – Jun. 2010
Teaching Assistant, Information Theory, PKU	Feb. 2008 – Jun. 2008

#### Postdoc Mentoring

Qian Zheng, NTU (with Prof. Alex C. Kot), Ph.D. from ZJU	Feb. 2018 – present
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#### Student Mentoring

Ce Wang, Ph.D. candidate at PKU (with Prof. Ling-Yu Duan)	Sep. 2017 – present
Daniel Teo, Research assistant at SUTD (with Prof. Sai-Kit Yeung)	Jun. 2016 – Jul. 2018
Renjie Wan, Ph.D. candidate at NTU (with Prof. Alex C. Kot)	Oct. 2015 – present
Huijing Zhan, Ph.D. candidate at NTU (with Prof. Alex C. Kot)	Oct. 2015 – present
Zhipeng Mo, Ph.D. candidate at SUTD (with Prof. Sai-Kit Yeung)	Aug. 2014 – present
Hang Zhao, Ph.D. candidate at MIT (with Prof. Ramesh Raskar)	Jan. 2014 – Mar. 2016

### INVITED TALKS

“High-Resolution 3D Modeling using Photometric and Polarimetric Techniques”  
 20180908 XJU, 20180417 Huawei, 20180220 NTU  
 “Polarimetric 3D Modeling”  
 20170922 Momenta  
 “Full-Dimensional Imaging and Camera Intelligence”  
 20181207 ANU, 20181203 keynote at ACCV18 LIMHPI workshop, 20180119 NUS, 20170921 360 AI, 20170426 BIT, 20170106 DeepGlint, 20161031 NAIST  
 “Conventional Computer Vision Problems Meet Unconventional Cameras”  
 20160324 BII AStar  
 “Camera Intelligence from Visual Computation and Sensor Innovation”  
 20160204 TTIC, 20160201 NVIDIA, 20150624 NTU, 20150604 PKU, 20150428 ShanghaiTech, 20150409 CUHK  
 “A New Super-Resolution Framework by Sub-Pixel Layout in the Octic Group”  
 20141206 UTokyo  
 “Generalized Photometric Modeling”  
 20140807 UCLA  
 “Photometric Stereo for General Reflectance”  
 20130304 MIT CSAIL, 20130221 MIT Media Lab

### LANGUAGE SKILLS

Mandarin Chinese: Native speaker  
 English: Fluent

Japanese: JLPT (Japanese Language Proficiency Test) – Level N1 (highest level)

**Last updated: Feb. 7, 2019**