

Book Chapter

- [1] **Boxin Shi**, Jinfa Yang*, Jinwei Chen, Ruihua Zhang, and Rui Chen, “Recent progress in shape from polarization”, In *Advances in Photometric 3D-Reconstruction*, Chapter 6, Springer, Sep. 2020.

International Journal

- [1] Renjie Wan, **Boxin Shi***, Haoliang Li, Yuchen Hong, Ling-Yu Duan, and Alex C. Kot, “Benchmarking single-image reflection removal algorithms”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2022. (Early access)
- [2] Youwei Lyu#, Zhaopeng Cui#, Si Li, Marc Pollefeys, and **Boxin Shi***, “Physics-guided reflection separation from a pair of unpolarized and polarized images”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2022. (Early access)
- [3] Yongjie Zhu, Chen Li, Si Li*, **Boxin Shi***, and Yu-Wing Tai, “Hybrid face reflectance, illumination, and shape from a single image”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Volume 44, Issue 9, Pages 5002-5015, 2022.
- [4] Tianyu Guo, Chang Xu*, **Boxin Shi***, Chao Xu, and Dacheng Tao, “Optimizing latent distributions for non-adversarial generative networks”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Volume 44, Issue 5, Pages 2657-2672, 2022.
- [5] Guanying Chen, Kai Han, **Boxin Shi**, Yasuyuki Matsushita, and Kwan-Yee K. Wong, “Deep photometric stereo for non-Lambertian surfaces”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Volume 44, Issue 1, Pages 129-142, 2022.
- [6] Hiroaki Santo, Masaki Samejima, Yusuke Sugano, **Boxin Shi**, and Yasuyuki Matsushita, “Deep photometric stereo networks for determining surface normal and reflectances”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Volume 44, Issue 1, Pages 114-128, 2022.
- [7] Heng Guo, Fumio Okura, **Boxin Shi**, Takuya Funatomi, Yasuhiro Mukaigawa, and Yasuyuki Matsushita, “Multispectral photometric stereo for spatially-varying spectral reflectances”, In *International Journal of Computer Vision (IJCV)*, Volume 130, Pages 2166-2183, 2022.
- [8] Xu Cao, Michael Waechter, **Boxin Shi**, Ye Gao, Bo Zheng, Fumio Okura, and Yasuyuki Matsushita, “Shape and albedo recovery by your phone using stereoscopic flash and No-flash photography”, In *International Journal of Computer Vision (IJCV)*, Volume 130, Pages 1403–1415 2022.
- [9] Yakun Ju, **Boxin Shi**, Muwei Jian, Lin Qi, Junyu Dong, and Kin-Man Lam, “NormAttention-PSN: A high-frequency region enhanced photometric stereo network with normalized attention”, In *International Journal of Computer Vision (IJCV)*, 2022. (Early access)
- [10] Tiejun Huang, Yajing Zheng, Zhaofei Yu, Rui Chen, Yuan Li, Ruiqin Xiong, Lei Ma, Junwei Zhao, Siwei Dong, Lin Zhu, Jianing Li, Shanshan Jia, Yihua Fu, **Boxin Shi**, Si Wu, and Yonghong Tian, “1000× faster camera and machine vision with ordinary devices”, In **Engineering**, 2022. (Early access)
- [11] Jing Zhao, Ruiqin Xiong, Jiyu Xie, **Boxin Shi**, Zhaofei Yu, Wen Gao, and Tiejun Huang, “Reconstructing clear image for high-speed motion scene with a retina-inspired spike camera”, In *IEEE Transactions on Computational Imaging (TCI)*, Volume 8, Pages 12-27, 2022
- [12] Ce Wang, Dejia Xu, Renjie Wan, Bin He, **Boxin Shi**, and Ling-Yu Duan, “Background scene recovery from an image looking through colored glass”, In *IEEE Transactions on Multimedia (TMM)*, 2022. (Early access)
- [13] Jinxiu Liang, Yong Xu, Yuhui Quan, **Boxin Shi**, and Hui Ji, “Self-supervised low-light image enhancement using discrepant untrained network priors”, In *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, 2022. (Early access)
- [14] Heng Guo#, Zhipeng Mo#, **Boxin Shi***, Feng Lu, Sai-Kit Yeung, Ping Tan, and Yasuyuki Matsushita, “Patch-based uncalibrated photometric stereo under natural illumination”, In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2021. (Early access)
- [15] Peiqi Duan#, Zihao W. Wang#, **Boxin Shi***, Oliver Cossairt, Tiejun Huang, and Aggelos Katsaggelos, “Guided event filtering: Synergy between intensity images and neuromorphic events

- for high performance imaging”, In IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2021. (Early access)
- [16] Lixiong Chen, Yinqiang Zheng, **Boxin Shi***, Art Subpa-Asa, and Imari Sato, “A microfacet-based model for photometric stereo with general isotropic reflectance”, In IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), Volume 43, Issue 1, Pages 48-61, 2021.
 - [17] Renjie Wan*, **Boxin Shi***, Haoliang Li, Ling-Yu Duan, and Alex C. Kot, “Face image reflection removal”, In International Journal of Computer Vision (**IJCV**), Volume 129, Pages 385-399, 2021.
 - [18] Huijing Zhan, Jie Lin, Kenan Emir Ak, **Boxin Shi***, Ling-Yu Duan, and Alex C. Kot, “A3-FKG: Attentive attribute-aware fashion knowledge graph for outfit preference prediction”, In IEEE Transactions on Multimedia (**TMM**), 2021. (Early access)
 - [19] Huijing Zhan, Chenyu Yi, **Boxin Shi***, Jie Lin, Ling-Yu Duan, and Alex C. Kot, “Pose-normalized and appearance-preserved street-to-shop clothing image generation and feature learning”, In IEEE Transactions on Multimedia (**TMM**), Volume 23, Issue 1, Pages 133-144, 2021.
 - [20] Zhipeng Mo, **Boxin Shi***, Sai-Kit Yeung, and Yasuyuki Matsushita, “Ambiguity-free radiometric calibration for Internet photo collections”, In IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), Volume 42, Issue 7, Pages 1670-1684, 2020.
 - [21] Renjie Wan, **Boxin Shi**, Haoliang Li, Ling-Yu Duan, Ah-Hwee Tan, and Alex C. Kot, “CoRRN: Cooperative reflection removal network”, In IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), Volume 42, Issue 12, Pages 2969-2982, 2020.
 - [22] Min Li, Zhenglong Zhou, Zhe Wu, **Boxin Shi***, Changyu Diao, and Ping Tan*, “Multi-view photometric stereo: A robust solution and benchmark dataset for spatially varying isotropic materials”, In IEEE Transactions on Image Processing (**TIP**), Volume 29, Issue 1, Pages 4159-4173, 2020.
 - [23] Tianyu Guo, Chang Xu, Shiyi He, **Boxin Shi**, Chao Xu, and Dacheng Tao, “Robust student network learning”, In IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), Volume 31, Issue 7, Pages 2455-2468, 2020.
 - [24] Weiwei Wan, **Boxin Shi**, Zijian Wang, and Rui Fukui, “Multirobot object transport via robust Caging”, In IEEE Transactions on Transactions on System, Man, and Cybernetics: Systems (**TSMC**), Volume 50, Issue 1, Pages 270-280, 2020.
 - [25] Yanbo Fan, Shuchen Weng, Yong Zhang, **Boxin Shi**, and Yi Zhang, “Context-aware cross-attention for skeleton-based human action recognition”, In IEEE **Access**, Volume 8, Pages 15280-15290, 2020.
 - [26] Ce Wang, **Boxin Shi***, and Ling-Yu Duan, “Learning to remove reflections from windshield images”, In Signal Processing: Image Communication (**SPIC**), Volume 78, Pages 94-102, 2019.
 - [27] Qian Zheng, Ajay Kumar, **Boxin Shi**, and Gang Pan, “Numerical reflectance compensation for non-Lambertian photometric stereo”, In IEEE Transactions on Image Processing (**TIP**), Volume 28, Issue 7, Pages 3177-3191, 2019.
 - [28] Huijing Zhan*, **Boxin Shi***, 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**), Volume 180, Pages 23-33, 2019.
 - [29] **Boxin Shi***, Zhipeng Mo, 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.
 - [30] Liang Xie, Yuhua Xu, Xiaohu Zhang, Wei Bao, Chenpeng Tong, and **Boxin Shi**, “A self-calibrated photo-geometric depth camera”, In **Visual Computer**, Volume 35, Issue 1, Pages 99-108, 2019.
 - [31] Xian-Hua Han, Yongqing Sun, Jian Wang, **Boxin Shi**, Yinqiang Zheng, and Yen-Wei Chen, “Spectral representation via data-guided sparsity for hyperspectral image super-resolution”, In **Sensors**, Volume 19, Issue 24, Pages 5401, 2019.
 - [32] 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.
 - [33] Renjie Wan, **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.

- [34] Achuta Kadambi*, Vage Taamazyan, **Boxin Shi***, 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).
- [35] Huijing Zhan*, **Boxin Shi***, 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.
- [36] Achuta Kadambi, Hang Zhao, **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.
- [37] Si Li and **Boxin Shi***, “Photometric stereo for general isotropic reflectances by spherical linear interpolation”, In Optical Engineering (**OE**), Volume 54, Issue 8, 083104, 2015.
- [38] Dan Raviv, Wei Zhao, Carrie McKnelly, Athina Papadopoulou, Achuta Kadambi, **Boxin Shi**, Shai Hirsch, Daniel Dikovsky, Mike Zyracki, 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://www.nature.com), doi:10.1038/srep07422)
- [39] **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.
- [40] 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] Chengxuan Zhu#, Renjie Wan#, and **Boxin Shi***, “Neural transmitted radiance fields”, In Proc. Thirty-sixth Conference on Neural Information Processing Systems (**NeurIPS**), New Orleans, LA, USA, Nov. 2022.
- [2] Jiajun Tang, Yongjie Zhu, Haoyu Wang, Jun Hoong Chan, Si Li, and **Boxin Shi***, “Estimating spatially-varying lighting in urban scenes with disentangled representation”, In Proc. European Conference on Computer Vision (**ECCV**), Tel Aviv, Israel, Oct. 2022. (Oral)
- [3] Shuchen Weng#, Jimeng Sun#, Yu Li, Si Li, and **Boxin Shi***, “CT²: Colorization transformer via color tokens”, In Proc. European Conference on Computer Vision (**ECCV**), Tel Aviv, Israel, Oct. 2022. (Oral)
- [4] Shuchen Weng, Yi Wei, Ming-Ching Chang, and **Boxin Shi***, “Instance contour adjustment via structure-driven CNN”, In Proc. European Conference on Computer Vision (**ECCV**), Tel Aviv, Israel, Oct. 2022.
- [5] Minggui Teng, Chu Zhou, Hanyue Lou, and **Boxin Shi***, “NEST: Neural event stack for event-based image enhancement”, In Proc. European Conference on Computer Vision (**ECCV**), Tel Aviv, Israel, Oct. 2022.
- [6] Dehao Zhang, Qiankun Ding, Peiqi Duan, Chu Zhou, and **Boxin Shi***, “Data association between event streams and intensity frames under diverse baselines”, In Proc. European Conference on Computer Vision (**ECCV**), Tel Aviv, Israel, Oct. 2022.
- [7] Zhewei Huang, Tianyuan Zhang, Wen Heng, **Boxin Shi***, and Shuchang Zhou*, “Real-time intermediate flow estimation for video frame interpolation”, In Proc. European Conference on Computer Vision (**ECCV**), Tel Aviv, Israel, Oct. 2022.
- [8] Zheng Chang#, Shuchen Weng#, Yu Li, Si Li, and **Boxin Shi**, “L-CoDer: Language-based colorization with color-object decoupling transformer”, In Proc. European Conference on Computer Vision (**ECCV**), Tel Aviv, Israel, Oct. 2022.
- [9] Xu Cao, Hiroaki Santo, **Boxin Shi**, Fumio Okura, and Yasuyuki Matsushita, “Bilateral normal integration”, In Proc. European Conference on Computer Vision (**ECCV**), Tel Aviv, Israel, Oct. 2022.
- [10] Yongjie Zhu, Chunhui Han, Yuefeng Zhan, Bochen Pang, Zhaoju Li, Hao Sun, Si Li, **Boxin Shi**, Nan Duan, Ruofei Zhang, Liangjie Zhang, Weiwei Deng, and Qi Zhang, “AdsCVLR: Commercial visual-linguistic representation modeling in sponsored search”, In Proc. ACM Multimedia Conference (**MM**), Lisbon, Portugal, Oct. 2022.
- [11] Xinyu Zhou#, Peiqi Duan#, Yi Ma, and **Boxin Shi***, “EvUnroll: Neuromorphic events based rolling shutter image correction”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), New Orleans, LA, USA, Jun. 2022.

- [12] Jieji Ren, Feishi Wang, Jiahao Zhang, Qian Zheng, Mingjun Ren*, and **Boxin Shi***, “DiLiGenT10²: A photometric stereo benchmark dataset with controlled shape and material variation”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), New Orleans, LA, USA, Jun. 2022.
- [13] Jimeng Sun[#], Shuchen Weng[#], Zheng Chang, Si Li, and **Boxin Shi**, “UniCoRN: A unified conditional image repainting network”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), New Orleans, LA, USA, Jun. 2022.
- [14] Liwen Hu[#], Rui Zhao[#], Ziluo Ding, Lei Ma, **Boxin Shi**, Ruiqin Xiong, and Tiejun Huang, “Optical flow estimation for spiking camera”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), New Orleans, LA, USA, Jun. 2022.
- [15] Shuchen Weng[#], Hao Wu[#], Zheng Chang, Jiajun Tang, Si Li, and **Boxin Shi**, “L-CoDe: Language-based colorization using color-object decoupled conditions”, In Proc. AAAI Conference on Artificial Intelligence (**AAAI**), Virtual (online), Feb. 2022.
- [16] Chu Zhou, Minggui Teng, Yufei Han, Chao Xu, and **Boxin Shi***, “Learning to dehaze with polarization”, In Proc. Thirty-fifth Conference on Neural Information Processing Systems (**NeurIPS**), Virtual (online), Dec. 2021.
- [17] Jin Han, Yixin Yang, Chu Zhou, Chao Xu, and **Boxin Shi***, “EvIntSR-Net: Event guided multiple latent frames reconstruction and super-resolution”, In Proc. International Conference on Computer Vision (**ICCV**), Virtual (online), Oct. 2021.
- [18] Chu Zhou, Minggui Teng, Jin Han, Chao Xu, and **Boxin Shi***, “DeLiEve-Net: Deblurring low-light images with light streaks and local events”, In Proc. International Conference on Computer Vision (**ICCV**) Workshop PBDL, Virtual (online), Oct. 2021.
- [19] Peiqi Duan, Zihao W. Wang, Xinyu Zhou, Yi Ma, and **Boxin Shi***, “EventZoom: Learning to denoise and super resolve neuromorphic events”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Virtual (online), Jun. 2021. (Oral)
- [20] Yongjie Zhu, Yinda Zhang, Si Li*, and **Boxin Shi***, “Spatially-varying outdoor lighting estimation from intrinsics”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Virtual (online), Jun. 2021. (Oral)
- [21] Yuchen Hong[#], Qian Zheng[#], Lingran Zhao, Xudong Jiang, Alex C. Kot, and **Boxin Shi***, “Panoramic image reflection removal”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Virtual (online), Jun. 2021.
- [22] Qian Zheng*, **Boxin Shi***, Jinnan Chen, Xudong Jiang, Ling-Yu Duan, and Alex C. Kot, “Single image reflection removal with absorption effect”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Virtual (online), Jun. 2021.
- [23] Xu Cao, **Boxin Shi**, Fumio Okura, and Yasuyuki Matsushita, “Normal integration via inverse plane fitting with minimum point-to-plane distance”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Virtual (online), Jun. 2021.
- [24] Heng Guo, Fumio Okura, **Boxin Shi**, Takuya Funatomi, Yasuhiro Mukaigawa, and Yasuyuki Matsushita, “Multispectral photometric stereo for spatially-varying spectral reflectances: A well posed problem?”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Virtual (online), Jun. 2021.
- [25] Yajing Zheng[#], Lingxiao Zheng[#], Zhaofei Yu, Lingran Zhao, **Boxin Shi**, Yonghong Tian, and Tiejun Huang, “High-speed image reconstruction through short-term plasticity for spiking cameras”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Virtual (online), Jun. 2021.
- [26] Yongjie Zhu, Jiajun Tang, Si Li, and **Boxin Shi***, “DeRenderNet: Intrinsic image decomposition of urban scenes with shape-(in)dependent shading rendering”, In Proc. International Conference on Computational Photography (**ICCP**), Haifa, Israel, May. 2021. (Oral)
- [27] Chu Zhou, Hang Zhao, Jin Han, Chang Xu, Chao Xu, Tiejun Huang, and **Boxin Shi***, “UnModNet: Learning to unwrap a modulo image for high dynamic range imaging”, In Proc. Thirty-fourth Conference on Neural Information Processing Systems (**NeurIPS**), Vancouver, Canada, Dec. 2020.
- [28] Zhuokun Yao, Kun Li*, Ying Fu, Haofeng Hu, and **Boxin Shi***, “GPS-Net: Graph-based photometric stereo network”, In Proc. Thirty-fourth Conference on Neural Information Processing Systems (**NeurIPS**), Vancouver, Canada, Dec. 2020.
- [29] Xu Liu, Chengtao Li, Jian Wang, Jingbo Wang, **Boxin Shi***, and Xiaodong He*, “Group contextual encoding for 3D point clouds”, In Proc. Thirty-fourth Conference on Neural Information Processing Systems (**NeurIPS**), Vancouver, Canada, Dec. 2020.

- [30] Xu Liu, Jiayan Cao, Qianqian Bi, Jian Wang, **Boxin Shi**, and Yichen Wei, “Dense point diffusion for 3D object detection”, In Proc. International Conference on 3D Vision (**3DV**), Fukuoka, Japan, Nov. 2020.
- [31] Shuchen Weng, Wenbo Li, Dawei Li, Hongxia Jin, and **Boxin Shi***, “Conditional image repainting via semantic bridge and piecewise value function”, In Proc. European Conference on Computer Vision (**ECCV**), Glasgow, UK, Aug. 2020.
- [32] Yunhao Ba, Alex Ross Gilbert, Franklin Wang, Jinfa Yang, Rui Chen, Yiqin Wang, Lei Yan, **Boxin Shi***, and Achuta Kadambi*, “Deep shape from polarization”, In Proc. European Conference on Computer Vision (**ECCV**), Glasgow, UK, Aug. 2020.
- [33] Bin He, Ce Wang, **Boxin Shi**, and Ling-Yu Duan, “FHDe²Net: Full high definition demoireing network”, In Proc. European Conference on Computer Vision (**ECCV**), Glasgow, UK, Aug. 2020.
- [34] Guanying Chen, Michael Waechter, **Boxin Shi**, Kwan-Yee Kenneth Wong, and Yasuyuki Matsushita, “What is learned in deep uncalibrated photometric stereo?”, In Proc. European Conference on Computer Vision (**ECCV**), Glasgow, UK, Aug. 2020.
- [35] Yuchen Hong, Youwei Lyu, Si Li, and **Boxin Shi**, “Near-infrared image guided reflection removal”, In Proc. IEEE International Conference on Multimedia & Expo (**ICME**), London, UK, Jul. 2020. (Oral)
- [36] Jin Han, Chu Zhou, Peiqi Duan, Yehui Tang, Chang Xu, Chao Xu, Tiejun Huang, and **Boxin Shi***, “Neuromorphic camera guided high dynamic range imaging”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [37] Zihao W. Wang[#], Peiqi Duan[#], Oliver Cossairt, Aggelos Katsaggelos, Tiejun Huang, and **Boxin Shi***, “Joint filtering of intensity images and neuromorphic events for high-resolution noise-robust imaging”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [38] Shuchen Weng[#], Wenbo Li[#], Dawei Li, Hongxia Jin, and **Boxin Shi***, “MISC: Multi-condition injection and spatially-adaptive compositing for conditional person rendering”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [39] Renjie Wan*, **Boxin Shi***, Haoliang Li, Ling-Yu Duan, and Alex C. Kot, “Reflection scene separation from a single image”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [40] Qian Zheng*, Jinnan Chen, Zhan Lu, **Boxin Shi***, Xudong Jiang, Kim-Hui Yap, Ling-Yu Duan, and Alex C. Kot, “What does plate glass reveal about camera calibration?”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [41] Xu Cao, Michael Waechter, **Boxin Shi**, Ye Gao, Bo Zheng, and Yasuyuki Matsushita, “Stereoscopic flash and no-flash photography for shape and albedo recovery”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [42] Shaohui Liu, Yinda Zhang, Songyou Peng, **Boxin Shi**, Marc Pollefeys, and Zhaopeng Cui, “DIST: Rendering deep implicit signed distance function with differentiable sphere tracing”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [43] Tianyu Guo, Chang Xu, Jiajun Huang, Yunhe Wang, **Boxin Shi**, Chao Xu, and Dacheng Tao, “On positive-unlabeled classification in GAN”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [44] Hanqing Chen[#], Yunhe Wang[#], Chunjing Xu, **Boxin Shi**, Chao Xu, Qi Tian, and Chang Xu, “AdderNet: Do we really need multiplications in deep learning?”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020. (Oral)
- [45] Hanqing Chen, Yunhe Wang, Han Shu, Yehui Tang, Chunjing Xu, **Boxin Shi**, Chao Xu, Qi Tian, and Chang Xu, “Frequency domain compact 3D convolutional neural networks”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [46] Zhaohui Yang, Yunhe Wang, Xinghao Chen, **Boxin Shi**, Chao Xu, Chunjing Xu, Qi Tian, and Chang Xu, “CARS: Continuous evolution for efficient neural architecture search”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.

- [47] Yehui Tang, Yunhe Wang, Yixing Xu, Hanqing Chen, **Boxin Shi**, Chao Xu, Chunjing Xu, Qi Tian, and Chang Xu, “A semi-supervised assessor of neural architectures”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Seattle, WA, USA, Jun. 2020.
- [48] Yehui Tang*, Shan You*, Chang Xu*, Jin Han, Chen Qian, **Boxin Shi***, Chao Xu, and Changshui Zhang, “Reborn filters: Pruning convolutional neural networks with limited data”, In Proc. AAAI Conference on Artificial Intelligence (**AAAI**), New York City, NY, USA, Feb. 2020.
- [49] Yehui Tang, Yunhe Wang, Yixing Xu, **Boxin Shi**, Chao Xu, Chunjing Xu, and Chang Xu, “Beyond dropout: Feature map distortion to regularize deep neural networks”, In Proc. AAAI Conference on Artificial Intelligence (**AAAI**), New York City, NY, USA, Feb. 2020.
- [50] Hanqing Chen, Yunhe Wang, Han Shu, Changyuan Wen, Chunjing Xu, **Boxin Shi**, Chao Xu, and Chang Xu, “Distilling portable generative adversarial networks for image translation”, In Proc. AAAI Conference on Artificial Intelligence (**AAAI**), New York City, NY, USA, Feb. 2020.
- [51] Youwei Lyu#, Zhaopeng Cui#, Si Li*, Marc Pollefeys, and **Boxin Shi***, “Reflection separation using a pair of unpolarized and polarized images”, In Proc. Thirty-third Conference on Neural Information Processing Systems (**NeurIPS**), Vancouver, Canada, Dec. 2019. (Spotlight)
- [52] Tianyu Guo*, Chang Xu*, **Boxin Shi***, Chao Xu, and Dacheng Tao, “Learning from bad data via generation”, In Proc. Thirty-third Conference on Neural Information Processing Systems (**NeurIPS**), Vancouver, Canada, Dec. 2019.
- [53] Qian Zheng**, Yiming Jia#, **Boxin Shi***, Xudong Jiang, Ling-Yu Duan, and Alex C. Kot, “SPLINE-Net: Sparse photometric stereo through lighting interpolation and normal estimation networks”, In Proc. International Conference on Computer Vision (**ICCV**), Seoul, Korea, Oct. 2019.
- [54] Bin He, Ce Wang, **Boxin Shi**, and Ling-Yu Duan, “Mop moire patterns using MopNet”, In Proc. International Conference on Computer Vision (**ICCV**), Seoul, Korea, Oct. 2019.
- [55] Daiqian Ma, Renjie Wan, **Boxin Shi**, Alex C. Kot, and Ling-Yu Duan, “Learning to jointly generate and separate reflections”, In Proc. International Conference on Computer Vision (**ICCV**), Seoul, Korea, Oct. 2019.
- [56] Hanqing Chen, Yunhe Wang, Chang Xu, Zhaohui Yang, Chuanjian Liu, **Boxin Shi**, Chunjing Xu, Chao Xu, and Qi Tian, “Data-free learning of student networks”, In Proc. International Conference on Computer Vision (**ICCV**), Seoul, Korea, Oct. 2019.
- [57] Zihao W. Wang, Weixin Jiang, Kuan He, **Boxin Shi**, Aggelos Katsaggelos, and Oliver Cossairt, “Event-driven video frame synthesis”, In Proc. International Conference on Computer Vision (**ICCV**) Workshop PBDL, Seoul, Korea, Oct. 2019.
- [58] Daiqian Ma, Yan Bai, Ce Wang, Renjie Wan, **Boxin Shi**, and Ling-Yu Duan, “See through the windshield from surveillance camera”, In Proc. ACM Multimedia Conference (**MM**), Nice, France, Oct. 2019.
- [59] Qian Zheng*, **Boxin Shi***, Xudong Jiang, Ling-Yu Duan, and Alex C. Kot, “Denoising adversarial networks for rain removal and reflection removal”, In Proc. International Conference on Image Processing (**ICIP**), Taiwan, China, Sep. 2019.
- [60] Huijing Zhan*, **Boxin Shi***, Jiawei Chen, Qian Zheng, Ling-Yu Duan, and Alex C. Kot, “Fashion recommendation on street images”, In Proc. International Conference on Image Processing (**ICIP**), Taiwan, China, Sep. 2019.
- [61] Lin Zhang, Jianbo Zhao, Si Li, **Boxin Shi**, and Ling-Yu Duan, “From market to dish: Multi-ingredient image recognition for personalized recipe recommendation”, In Proc. IEEE International Conference on Multimedia & Expo (**ICME**), Shanghai, China, Jul. 2019.
- [62] Ce Wang, Renjie Wan, Feng Gao, **Boxin Shi**, and Ling-Yu Duan, “Learning to remove reflections for text images”, In Proc. IEEE International Conference on Multimedia & Expo (**ICME**), Shanghai, China, Jul. 2019.
- [63] Guanying Chen, Kai Han, **Boxin Shi**, Yasuyuki Matsushita, and Kwan-Yee K. Wong, “Self-calibrating deep photometric stereo networks”, In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), Long Beach, CA, USA, Jun. 2019. (Oral)
- [64] Zhaohui Yang, Yunhe Wang, Hanqing Chen, Chuanjian Liu, **Boxin Shi**, Chao Xu, Chunjing Xu, Chang Xu, “LegoNet: Efficient convolutional neural networks with Lego filters”, In Proc. International Conference on Machine Learning (**ICML**), Long Beach, CA, USA, Jun. 2019.
- [65] Tianyu Guo, 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.

- [66] Bin He, Feng Gao, Daiqian Ma, **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.
- [67] 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.
- [68] 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.
- [69] Zhipeng Mo, **Boxin Shi***, 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.
- [70] Daniel Teo Guangwei, **Boxin Shi***, 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.
- [71] Renjie Wan*, **Boxin Shi***, 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.
- [72] 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.
- [73] 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), Taiwan, China, Dec. 2017.
- [74] Renjie Wan*, **Boxin Shi***, 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.
- [75] 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.
- [76] 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**)
- [77] Huijing Zhan, **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)
- [78] 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)
- [79] Huijing Zhan, **Boxin Shi**, and Alex C. Kot, “Street-to-shop shoe retrieval”, In Proc. British Machine Vision Conference (BMVC), London, UK, Sep. 2017.
- [80] Zhipeng Mo, **Boxin Shi***, 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)
- [81] 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.
- [82] Renjie Wan, **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)
- [83] Huijing Zhan, **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)
- [84] Huijing Zhan, **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)
- [85] Renjie Wan, **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)

- [86] **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.
- [87] 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)
- [88] 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.
- [89] Christy Fernandez-Cull, Hang Zhao, **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)
- [90] Hang Zhao, **Boxin Shi***, 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**)
- [91] 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)
- [92] **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.
- [93] R. Hamilton Shepard, Christy Fernandez-Cull, Ramesh Raskar, **Boxin Shi**, Christopher Barsi, and Hang Zhao, “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)
- [94] **Boxin Shi***, Hang Zhao, 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.
- [95] **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.
- [96] **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.
- [97] 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.
- [98] 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.
- [99] **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)
- [100] **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.
- [101] **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)
- [102] 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)
- [103] **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)

- [104] **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.

Domestic Journal

- [1] Tiejun Huang, Zhaofei Yu, Yuan Li, **Boxin Shi**, Ruiqin Xiong, Lei Ma, and Wei Wang, “Advances in spike vision”, In Journal of Image and Graphics (**JIG**), Volume 27, Issue 6, Pages 1823-1839, 2022. (In Chinese)
- [2] Yuqing Liu, Yuhuai Zhang, Peiqi Duan, **Boxin Shi***, Tiejun Huang, and Wen Gao, “Technical countermeasures for security risks of artificial general intelligence”, In **Strategic Study of CAE**, Volume 23, Issue 3, Pages 75-81, 2021. (In Chinese)
- [3] Ruihua Zhang, **Boxin Shi**, Jinfa Yang, Hongying Zhao*, and Zhengkang Zuo, “Polarimetric multi-view 3D reconstruction based on parallax angle and zenith angle optimization”, In Journal of Infrared and Millimeter Waves (**JIRMV**), Volume 40, Issue 1, Pages 133-142, 2021. (In Chinese)
- [4] Qian Zheng, **Boxin Shi***, and Gang Pan, “Summary study of data-driven photometric stereo methods”, In Virtual Reality & Intelligent Hardware (**VRIH**), Volume 2, Issue 3, Pages 213-221, 2020. (In English)
- [5] Jinfa Yang, Lei Yan, Hongying Zhao*, Rui Chen, Ruihua Zhang, and **Boxin Shi***, “Shape from polarization of low-texture objects with rough depth information”, In Journal of Infrared and Millimeter Waves (**JIRMV**), Volume 38, Issue 6, Pages 819-827, 2019. (In Chinese)