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Education

- **Ph.D. - National University of Singapore** — Singapore
  Thesis: Digital Video Stabilization — *Jan. 2011 - Dec. 2014*
  Supervisor: Prof. Ping Tan

- **Master - National University of Singapore** — Singapore
  Thesis: Digital Image Super-Resolution — *July. 2008 - Dec. 2010*
  Supervisor: Prof. Michael S. Brown

- **Bachelor - Sichuan University** — China
  Computer Science — *Sept. 2004 - Jun. 2008*

Professional Experiences

- **University of Electronic Science and Technology of China**
  Professor, School of Information and Communication Engineering — *July 2023 - Now*

- **University of Electronic Science and Technology of China**
  Associate Professor, School of Information and Communication Engineering — *Jan. 2018 - Jun. 2023*

- **University of Electronic Science and Technology of China**
  Associate Professor, School of Electronic Engineering — *March 2015 - Dec. 2017*

- **Adobe Research, Seattle, USA**
  Intern, Creative Lab — *2013 summer*
  Mentors: Dr. Sunghyun Cho, Dr. Jue Wang

- **Microsoft Research Asia, Beijing, China**
  Intern, Vision Lab — *Sept. 2012 - March 2013*
  Mentors: Dr. Lu Yuan , Dr. Jian Sun

Publications - Journal

TPAMI(5), **TIP**(12), **TCSVT**(11), **TOG**(5), **IJCV**(1), **TNNLS**(1), **TMM**(1), **TCI**(1), **PR**(2), **TITS**(1)

1. Hao Xu, Yinqiao Wang, **Shuaicheng Liu**, Pheng Ann Heng, Niloy Mitra, Chi-Wing Fu, "Hand Shadow Poser", ACM Transactions on Graphics (**ToG**), Proceedings of **SIGGRAPH**, 2025. [PDF] [Code]

2. **Shuaicheng Liu**, Mingbo Hong, Yuhang Lu, Nianjin Ye, Chunyu Lin, Bing Zeng, "Unsupervised Global and Local Homography Estimation with Coplanarity-Aware GAN", IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2025. [PDF][Code]

3. **Shuaicheng Liu**, Zhuofan Zhang, Zhen Liu, Ping Tan, Bing Zeng, "Minimum Latency Deep Online Video Stabilization and Its Extensions", IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2025. [PDF][Code]

4. Ziwei Luo, Haibin Huang, Lei Yu, Youwei Li, Bing Zeng, **Shuaicheng Liu**, "Kernel Reformulation with Deep Constrained Least Squares for Blind Image Super-Resolution", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2025. [PDF] [Code]

5. Zhanglei Yang, Haipeng Li, Shen Cheng, Mingbo Hong, Bing Zeng, **Shuaicheng Liu**, "Multi-Frame Rolling Shutter Correction with Diffusion Models", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2025. [PDF] [Code]

6. Lang Nie, Chunyu Lin, Kang Liao, **Shuaicheng Liu**, Yao Zhao, "Semi-Supervised Coupled Thin-Plate Spline Model for Rotation Correction and Beyond", IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), vol. 46, no. 12, pp. 9192-9204, 2024. [PDF][Code]

7. Haipeng Li, Hai Jiang, Ao Luo, Ping Tan, Haoqiang Fan, Bing Zeng, **Shuaicheng Liu**, "DMHomo: Learning Homography with Diffusion Models", ACM Transactions on Graphics (**ToG**), vol. 43, issue 3, no. 30, present at **SIGGRAPH** 2024. [PDF] [Code]

8. Haipeng Li, Kunming Luo, Bing Zeng, **Shuaicheng Liu**, "GyroFlow+: Gyroscope-Guided Unsupervised Deep Homography and Optical Flow Learning", International Journal of Computer Vision (**IJCV**), vol. 132, no. 6, pp. 2331-2349, 2024. [PDF] [Code]

9. Zhengning Wang, Xuhang Liu, Chuan Wang, Ting Jiang, Tianjiao Zeng, Zhenni Zeng, Guoqing Wang **Shuaicheng Liu**, "Reconstruction flow recurrent network for compressed video quality enhancement", Pattern Recognition (**PR**), vol. 155, pp. 110638, 2024. [PDF] [Code]

10. Haipeng Li, Dingrui Liu, Yu Zeng, **Shuaicheng Liu**, Tao Gan, Nini Rao, Jinlin Yang, Bing Zeng, "Single-Image-Based Deep Learning for Segmentation of Early Esophageal Cancer Lesions", IEEE Transactions on Image Processing (**TIP**), vol. 33, pp. 2676-2688, 2024. [PDF] [Code]

11. Yike Liu, Haipeng Li, **Shuaicheng Liu**, Bing Zeng, "CodingHomo: Bootstrapping Deep Homography with Video Coding", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), vol. 34, no. 11, pp. 9192-9204, 2024. [PDF] [Code]

12. Ru Li, Peng Dai, Guanghui Liu, Shengping Zhang, Bing Zeng, **Shuaicheng Liu**, "PBR-GAN: Imitating Physically Based Rendering with Generative Adversarial Networks", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), vol. 34, no.3, pp. 1827-1840, 2024. [PDF] [Code]

13. Hai Jiang, Ao Luo, Haoqiang Fan, Songchen Han, **Shuaicheng Liu**, "Low-Light Image Enhancement with Wavelet-based Diffusion Models", ACM Transactions on Graphics (**ToG**), Proceedings of **SIGGRAPH Asia**, vol. 42, no. 6, pp. 238:1-238:14, 2023. [PDF] [Code]

14. **Shuaicheng Liu**, Yuhang Lu, Hai Jiang, Nianjin Ye, Chuang Wang, Bing Zeng, "Unsupervised Global and Local Homography Estimation with Motion Basis Learning", IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), vol. 45, no. 6, pp. 7885-7899, 2023. [PDF][Code]

15. Lang Nie, Chunyu Lin, Kang Liao, **Shuaicheng Liu**, Yao Zhao, "Deep Rotation Correction without Angle Prior", IEEE Transactions on Image Processing (**TIP**), vol. 32, pp. 2879-2888, 2023. [PDF][Code]

16. Qingdong He, Zhengning Wang, Hao Zeng, Yi Zeng, Yijun Liu, **Shuaicheng Liu**, Bing Zeng, "Stereo RGB and Deeper LIDAR-Based Network for 3D Object Detection in Autonomous Driving", IEEE Transactions on Intelligent Transportation System (**TITS**), vol. 24, no. 1, pp. 152-162, 2023. [PDF][Code]

17. **Shuaicheng Liu**, Nianjin Ye, Chuan Wang, Jirong Zhang, Lanpeng Jia, Kunming Luo, Jue Wang, Jian Sun, "Content-Aware Unsupervised Deep Homography Estimation and Its Extensions", IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), vol. 45, no. 3, pp. 2849-2863, 2023. [PDF][Code]

18. Ming Zhang, **Shuaicheng Liu**, Bing Zeng, "Dynamic Updating Self-training for Semi-weakly Supervised Object Detection", Neurocomputing, vol. 547, pp. 126375, 2023. [PDF]

19. Ru Li, Chuan Wang, Jue Wang, Guanghui Liu, Heng-Yu Zhang, Bing Zeng, **Shuaicheng Liu**, "UPHDR-GAN: Generative Adversarial Network for High Dynamic Range Imaging with Unpaired Data", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), vol. 32, no. 11, pp. 7532-7546, 2022. [PDF] [Code]

20. **Shuaicheng Liu**, Kunming Luo, Nianjin Ye, Chuan Wang, Jue Wang, Bing Zeng, "OIFlow: Occlusion-Inpainting Optical Flow Estimation by Unsupervised Learning", IEEE Transactions on Image Processing (**TIP**), vol. 30, pp. 6420-6433, 2021. [PDF][Code]

21. Lang Nie, Chunyu Lin, Kang Liao, **Shuaicheng Liu**, Yao Zhao, "Unsupervised Deep Image Stitching: Reconstructing Stitched Features to Images", IEEE Transactions on Image Processing (**TIP**), vol. 30, pp. 6184-6197, 2021. [PDF][Code]

22. Jiaxiong Qiu, Cai Chen, **Shuaicheng Liu**, Henyu Zhang, Bing Zeng, "SlimConv: Reducing Channel Redundancy in Convolutional Neural Networks by Features Recombining", IEEE Transactions on Image Processing (**TIP**), vol. 30, pp. 6434-6445, 2021. [PDF] [Code]

23. Chuan Wang, Shan Zhao, Li Zhu, Kunming Luo, Yanwei Guo, Jue Wang, **Shuaicheng Liu**, "Semi-supervised Pixel-level Scene Text Segmentation by Mutually Guided Network", IEEE Transactions on Image Processing (**TIP**), vol. 30, pp. 8212-8221, 2021.[PDF]

24. Ru Li, **Shuaicheng Liu**, Guangfu Wang, Guanghui Liu, Bing Zeng, "JigsawGAN: Auxiliary Learning for Solving Jigsaw Puzzles with Generative Adversarial Networks", IEEE Transactions on Image Processing (**TIP**), vol. 31, pp. 513-524, 2021. [PDF]

25. Tiecheng Sun, Guanghui Liu, Ru Li, **Shuaicheng Liu**, Shuyuan Zhu, Bing Zeng, "Quadratic Terms based Point-to-Surface 3D Representation for Deep Learning of Point Cloud", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), vol. 32, no. 5, pp. 2705-2718, 2021. [PDF]

26. **Shuaicheng Liu**, Haipeng Li, Zhengning Wang, Jue Wang, Shuyuan Zhu, Bing Zeng, "DeepOIS: Gyroscope-Guided Deep Optical Image Stabilizer Compensation", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), vol. 32, no. 5, pp. 2856-2867, 2021. [PDF] [Code]

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29. Liyang Zhang, **Shuaicheng Liu**, Donghao Liu, Pengpeng Zeng, Xiangpeng Li, Jingkuan Song, Lianli Gao, "Rich Visual Knowledge-based Augmentation Network for Visual Question Answering", IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), vol. 32, no. 10, pp. 4362-4373, 2021. [PDF]

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31. Tiecheng Sun, Guanghui Liu, **Shuaicheng Liu**, Fanman Meng, Liaoyuan Zeng, Ru Li, "An Efficient and Compact 3D Local Descriptor based on the Weighted Height Image", Information Sciences, vol. 520, pp. 209-231, 2020. [PDF]

32. Peng Dai, Zhuwen Li, Yinda Zhang, **Shuaicheng Liu**, Bing Zeng, "PBR-Net: Imitating Physically Based Rendering using Deep Neural Network", IEEE Transactions on Image Processing (**TIP**), vol. 29, pp. 5980-5992, 2020. [PDF]

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34. Ru Li, **Shuaicheng Liu**, Guanghui Liu, Tiecheng Sun, Jishun Guo, "Multi-exposure Photomontage with Hand-held Cameras", Computer Vision and Image Understanding (**CVIU**), vol. 193, pp. 102929, 2020. [PDF]

35. Heng Guo, **Shuaicheng Liu**, Shuyuan Zhu, Heng Tao Shen, Bing Zeng, "View-Consistent MeshFlow for Stereoscopic Video Stabilization", IEEE Transactions on Computational Imaging (**TCI**), vol. 4, no. 4, pp. 573-584, 2019. [PDF]

36. Shuyuan Zhu, Zhiying He, Chen Chen, **Shuaicheng Liu**, Jiantao Zhou, Yuanfang Guo, Bing Zeng, "High-Quality Color Image Compression by Quantization Crossing Color Spaces", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), vol. 19, no. 5, pp. 1474-1487, 2019. [PDF]

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38. Yinglong Wang, **Shuaicheng Liu**, Chen Chen, Bing Zeng, "A Hierarchical Approach for Rain or Snow Removing in A Single Color Image", IEEE Transactions on Image Processing (**TIP**), vol. 26, no. 8, pp. 3936-3950, 2017. [PDF]

39. **Shuaicheng Liu**, Mingyu Li, Shuyuan Zhu, Bing Zeng, "CodingFlow: Enable Video Coding for Video Stabilization", IEEE Transactions on Image Processing (**TIP**), vol. 26, no. 7, pp. 3291-3302, 2017.[PDF]

40. **Shuaicheng Liu**, Binhan Xu, Chuang Deng, Shuyuan Zhu, Bing Zeng, Moncef Gabbouj, "A Hybrid Approach for Near-Range Video Stabilization", IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), vol. 27, no. 9, pp. 1922-1933, 2017. [PDF]

41. Heng Guo, **Shuaicheng Liu**, Tong He, Shuyuan Zhu, Bing Zeng, Moncef Gabbouj, "Joint Video Stitching and Stabilization from Moving Cameras", IEEE Transactions on Image Processing (**TIP**), vol. 25, no. 11, pp. 5491-5503, 2016. [PDF][Code]

42. Kaimo Lin, **Shuaicheng Liu**, Loong-Fah Cheong, Bing Zeng, "Seamless Video Stitching from Hand-held Camera Inputs", Computer Graphics Forum, Proceedings of EuroGraphics, vol. 35, no. 2, pp. 479-487, 2016. [PDF][Code]

43. **Shuaicheng Liu**,Jue Wang, Sunghyun Cho, Ping Tan, "TrackCam: 3D-aware Tracking Shots from Consumer Video", ACM Transactions on Graphics (**ToG**), Proceedings of **SIGGRAPH Asia**, 2014. [PDF] [Code]

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CVPR(26), **ICCV**(16), **ECCV**(11), **AAAI**(10), **ACM MM**(3), — **Oral**(9)

45. Ruiyi Wang, Yushuo Zheng, Zicheng Zhang, Chunyi Li, **Shuaicheng Liu**, Guangtao Zhai, Xiaohong Liu "Learning Hazing to Dehazing: Towards Realistic Haze Generation for Real-World Image Dehazing", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025. [PDF] [Code]

46. Du Keyu, Hao Xu, Haipeng Li, Hong Qu, Chi-Wing Fu, **Shuaicheng Liu**, "HybridReg: Robust 3D Point Cloud Registration with Hybrid Motions", Thirty-Ninth AAAI Conference on Artificial Intelligence (**AAAI**), 2025. [PDF] [Code]

47. Zhanglei Yang, Haipeng Li, MingboHong, Chen-Lin Zhang, Jiajun Li,**Shuaicheng Liu**, "Single Image Rolling Shutter Removal with Diffusion Models", Thirty-Ninth AAAI Conference on Artificial Intelligence (**AAAI**), 2025. [PDF] [Code]

48. Yang Ren, Hai Jiang, Menglong Yang, Wei Li,**Shuaicheng Liu**, "ISPDiffuser: Learning RAW-to-sRGB Mappings with Texture-Aware Diffusion Models and Histogram-Guided Color Consistency", Thirty-Ninth AAAI Conference on Artificial Intelligence (**AAAI**), 2025. [PDF] [Code]

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50. Jinting Luo, Ru Li, Chengzhi Jiang, Xiaoming Zhang, Mingyan Han, Ting Jiang, Haoqiang Fan,**Shuaicheng Liu**, "Diff-Shadow: Global-guided Diffusion Model for Shadow Removal", Thirty-Ninth AAAI Conference on Artificial Intelligence (**AAAI**), 2025. [PDF] [Code]

51. Qinglun Zhang, Zhen Liu, Haoqiang Fan, Guanghui Liu, Bing Zeng, **Shuaicheng Liu**, "FlowPolicy: Enabling Fast and Robust 3D Flow-based Policy via Consistency Flow Matching for Robot Manipulation", Thirty-Ninth AAAI Conference on Artificial Intelligence (**AAAI**), 2025. **Oral presentation** [PDF] [Code]

52. Mingbo Hong, Shen Cheng, Haibin Huang, Haoqiang Fan, **Shuaicheng Liu**, "You Only Look Around: Learning Illumination-Invariant Feature for Low-light Object Detection", Conference on Neural Information Processing Systems (**NeurIPS**), 2024. [PDF] [Code]

53. Xiaole Zhao, Linze Li, Chengxing Xie, Xiaoming Zhang, Ting Jiang, Wenjie Lin, **Shuaicheng Liu**, Tianrui Li, "Efficient Single Image Super-Resolution with Entropy Attention and Receptive Field Augmentation", ACM Conference on Multimedia (**MM**), 2024. [PDF] [Code]

54. Shaolei Yang, Shen Cheng, Mingbo Hong, Haoqiang Fan, Xing Wei, **Shuaicheng Liu**, "Neural Spectral Decomposition for Dataset Distillation", European Conference on Computer Vision (**ECCV**), 2024. [PDF] [Code]

55. Lang Nie, Chunyu Lin, Kang Liao, Yun Zhang, **Shuaicheng Liu**, Rui Ai, Yao Zhao, "Eliminating Warping Shakes for Unsupervised Online Video Stitching", European Conference on Computer Vision (**ECCV**), 2024. [PDF] [Code]

56. Hai Jiang, Ao Luo, Xiaohong Liu, Songchen Han, **Shuaicheng Liu**, "LightenDiffusion: Unsupervised Low-Light Image Enhancement with Latent-Retinex Diffusion Models", European Conference on Computer Vision (**ECCV**), 2024. [PDF] [Code]

57. Han Zhou, Wei Dong, Xiaohong Liu, **Shuaicheng Liu**, Xiongkuo Min, Guangtao Zhai, Jun Chen, "GLARE: Low Light Image Enhancement via Generative Latent Feature based Codebook Retrieval", European Conference on Computer Vision (**ECCV**), 2024. [PDF] [Code]

58. Suyi Chen, Hao Xu, Haipeng Li, Kunming Luo, Guanghui Liu, Chi-Wing Fu, Ping Tan, **Shuaicheng Liu**, "PointRegGPT: Boosting 3D Point Cloud Registration using Generative Point-Cloud Pairs for Training", European Conference on Computer Vision (**ECCV**), 2024. [PDF] [Code]

59. Xinglong Luo, Ao Luo, Zhengning Wang, Chunyu Lin, Bing Zeng, **Shuaicheng Liu**, "Efficent Meshflow and Optical Flow Estimation from Event Cameras", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024. [PDF] [Code]

60. Ao Luo, Xin Li, Fan Yang, Jiangyu Liu, Haoqiang Fan, **Shuaicheng Liu**, "FlowDiffuser: Advancing Optical Flow Estimation with Diffusion Models", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024. **Highlight, 11.9%** [PDF] [Code]

61. Tianhao Zhou, Haipeng Li, Ziyi Wang, Ao Luo, Chen-Lin Zhang, Jiajun Li, Bing Zeng, **Shuaicheng Liu**, "Rectangling for Image Stitching with Diffusion Models", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024. [PDF] [Code]

62. Hao Xu, Haipeng Li, Yinqiao Wang, **Shuaicheng Liu**, Chi-Wing Fu, "HandBooster: Boosting 3D Hand-Mesh Reconstruction by Conditional Synthesis and Sampling of Hand-Object Interactions", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024. [PDF] [Code]

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74. Guangyang Wu, Wenyi Wang, Kunming Luo, Xi Liu, Qingqing Zheng, **Shuaicheng Liu**, Xinyang Jiang, Guangtao Zhai, Xiaohong Liu, "AccFlow: Backward Accumulation for Long-Range Optical Flow", International Conference on Computer Vision (**ICCV**), 2023. [PDF] [Code]

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77. Hai Jiang, Haipeng Li, Yuhang Lu, Songchen Han, **Shuaicheng Liu**, "Semi-supervised Deep Large-baseline Homography Estimation with Progressive Equivalence Constraint", Thirty-Seventh AAAI Conference on Artificial Intelligence (**AAAI**), 2023. [PDF] [Code]

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82. Ziwei Luo, Youwei Li, Lei Yu, Qi Wu, Zhihong Wen, Haoqiang Fan, **Shuaicheng Liu**, "Fast Nearest Convolution for Real-Time Efficient Image Super-Resolution", European Conference on Computer Vision Workshop (**ECCVW**), 2022. [PDF] [Code]

83. Ziwei Luo, Youwei Li, Shen Cheng, Lei Yu, Zhihong Wen, Haoqiang Fan, Jian Sun, **Shuaicheng Liu**, "BSRT: Improving Burst Super-Resolution with Swin Transformer and Flow-Guided Deformable Alignment", IEEE Conference on Computer Vision and Pattern Recognition Workshop (**CVPRW**), pp. 997-1007, NTIRE Challenges - Super Resolution (**Winner Award**), 2022. [PDF] [Code]

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86. Chengzhou Tang, Yuqiang Yang, Bing Zeng, Ping Tan, **Shuaicheng Liu**, "Learning to Zoom Inside Camera Imaging Pipeline", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 17531-17540, 2022. [PDF]

87. Fushun Zhu, Shan Zhao, Peng Wang, Hao Wang, Hua Yan, **Shuaicheng Liu**, "Semi-Supervised Wide-Angle Portraits Correction by Multi-Scale Transformer", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 19657-19666, 2022. [PDF] [Code]

88. Lang Nie, Chunyu Lin, Kang Liao, **Shuaicheng Liu**, Yao Zhao, "Deep Rectangling for Image Stitching: A Learning Baseline", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 5730-5738, 2022. **Oral presentation, 4%** [PDF] [Code]

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90. Ziwei Luo, Haibin Huang, Lei Yu, Youwei Li, Haoqiang Fan, **Shuaicheng Liu**, "Deep Constrained Least Squares for Blind Image Super-Resolution", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 17621-17631, 2022. [PDF] [Code]

91. Luwei Yang, Rakesh Shrestha, Wenbo Li, **Shuaicheng Liu**, Guofeng Zhang, Zhaopeng Cui, Ping Tan, "SceneSqueezer: Learning to Compress Scene for Camera Relocalization", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 8249-8258, 2022. **Oral presentation, 4%** [PDF] [Code]

92. Jiankun Li, Peisen Wang, Tao Cai, Ziwei Yan, Pengfei Xiong, Jiangyu Liu, Lei Yang, Haoqiang Fan, **Shuaicheng Liu**,"Practical Stereo Matching via Cascaded Recurrent Network with Adaptive Correlation", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 16242-16251, 2022. **Oral presentation, 4%** [PDF] [Code]

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94. Ao Luo, Fan Fang, Kunming Luo, Xin Li, Haoqiang Fan, **Shuaicheng Liu**, "Learning Optical Flow with Adaptive Graph Reasoning", Thirty-Sixth AAAI Conference on Artificial Intelligence (**AAAI**), pp. 1890-1898, 2022. [PDF] [Code]

95. Nianjin Ye, Chuan Wang, Haoqiang Fan, **Shuaicheng Liu**, "Motion Basis Learning for Unsupervised Deep Homography Estimation with Subspace", IEEE International Conference on Computer Vision (**ICCV**), pp. 13097-13105, 2021. **Oral presentation, 3%** [PDF] [Code]

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108. Mingyi Zhou, Jing Wu, Yipeng Liu, **Shuaicheng Liu**, Ce Zhu, "DaST: Data-free Substitute Training for Adversarial Attacks", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 231-240, 2020. **Oral presentation, 5.7%** [PDF] [Code]

109. Peng Dai, Yinda Zhang, Zhuwen Li, **Shuaicheng Liu**, Bing Zeng, "Neural Point Cloud Rendering via Multi-Plane Projection", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 7827-7836, 2020. [PDF] [Code]

110. Xiandong Meng, Xuan Deng, Shuyuan Zhu, **Shuaicheng Liu**, Bing Zeng, "Flow-Guided Temporal-Spatial Network for HEVC Compressed Video Quality Enhancement", Data Compression Conference (**DCC**), 2020. [PDF]

111. Chao Zhang, **Shuaicheng Liu**, Xun Xu, Ce Zhu, "C3AE:Exploring the Limits of Compact Model for Age Estimation", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 12587-12596, 2019. [PDF]

112. Jiaxiong Qiu, Zhaopeng Cui, Yinda Zhang, Xingdi Zhang, **Shuaicheng Liu**, Bing Zeng, Marc Pollefeys, "DeepLiDAR: Deep Surface Normal Guided Depth Prediction for Outdoor Scene from Sparse LiDAR Data and Single Color Image", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 3313-3322, 2019. [PDF] [Code]

113. Tiecheng Sun, **Shuaicheng Liu**, Guanghui Liu, Shuyuan Zhu, Zhipeng Zhu, "A 3D Descriptor based on Local Height Image", IEEE International Symposium on Circuits and Systems (ISCAS), 2018. [PDF]

114. Kaimo Lin, Nianjuan Jiang, **Shuaicheng Liu**, Loong-Fah Cheong, Minh Do, Jiangbo Lu, "Direct Photometric Alignment by Mesh Deformation", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 2701-2709, 2017. [PDF] [Code]

115. **Shuaicheng Liu**, Ping Tan, Lu Yuan, Jian Sun, Bing Zeng, "MeshFlow: Minimum Latency Online Video Stabilization", European Conference on Computer Vision (**ECCV**), pp. 800-815, 2016. [PDF] [Code]

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118. **Shuaicheng Liu**, Yinting Wang, Lu Yuan, Jiajun Bu, Ping Tan, Jian Sun, "Video Stabilization with a Depth Camera", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 89-95, 2012. [PDF] [Code]

119. **Shuaicheng Liu**, Michael S.Brown, Seon Joo Kim, Yu-Wing Tai, "Colorization for Single Image Super Resolution", European Conference on Computer Vision (**ECCV**), pp. 323-336, 2010. [PDF] [Code]

120. Yu-Wing Tai, **Shuaicheng Liu**, Michael S.Brown, Stephen Lin, "Super Resolution using Edge Prior and Single Image Detail Synthesis", IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 2400-2407, 2010. [PDF] [Code]

Patents

121. Jue Wang, Sunghyun Cho, Dun-Yu Hsiao, **Shuaicheng Liu**, "Joint Video Deblurring and Stabilization", U.S. Patent No. 9,224,194. 2015.

122. Jue Wang, Sunghyun Cho, **Shuaicheng Liu**, "Simulating Tracking Shots from Image Sequences", U.S. Patent No. 9,253,415. 2016

Honors and Awards

- Challenge on Manipulation Skill Learning (**ManiSkill**): Visuotactile Manipulation, Winner, 2025
- Challenge on Manipulation Skill Learning (**ManiSkill**): Sensor Structure Design, Winner, 2025
- New Trends in Image Restoration and Enhancement (**NTIRE**): BracketIRE, Runner up, 2024
- New Trends in Image Restoration and Enhancement (**NTIRE**): Efficient Super Resolution, Winner, 2023
- New Trends in Image Restoration and Enhancement (**NTIRE**): Shadow Removal, Runner up, 2023
- Mobile Intelligent Photography and Imaging (**MIPI**): RGBW Joint Fusion and Denoise, Runner up, 2023
- New Trends in Image Restoration and Enhancement (**NTIRE**): Burst Super Resolution Real, Winner, 2022
- Mobile Intelligent Photography and Imaging (**MIPI**): RGBW Sensor Fusion, Runner up, 2022
- New Trends in Image Restoration and Enhancement (**NTIRE**): High Dynamic Range Challenge, Winner, 2021
- New Trends in Image Restoration and Enhancement (**NTIRE**): Burst Super Resolution Real, Winner, 2021
- New Trends in Image Restoration and Enhancement (**NTIRE**): Burst Super Resolution Synthetic, Runner up, 2021
- Mobile AI Challenges (**MAI**) - Smartphone Image Denoising, Runner up, 2021

Professional Services

- IEEE Senior Member, 2023
- Guest Editor, Remote Sensing, 2022∼2023
- Senior Program Committee, AAAI 2022
- Associate Editor, International Conference on Intelligent Robots and Systems (IROS) 2021,2022,2024,2025
- Session Chair, ACM Multimedia 2021, Doctoral Symposium track
- Local Chair, Visual Communication and Image Processing (VCIP), Chengdu, 2016
- Session Chair, International Conference on Image Processing (ICIP), Bejing, 2017.
- Program Committee, Pacific Graphics, 2018, 2020
- Conference Reviewer: CVPR, ICCV, ECCV, AAAI, SIGGRAPH/Asia, ICIP, ACM Multimedia
- Journal Reviewer: TPAMI, TOG, IJCV, TIP, TMM, TCSVT, TVCG, SPL, CVIU, PR etc.

Teaching

- "Fundamentals of Artificial Intelligence", undergraduate course, 2025 ∼
- "Artificial Intelligence", graduate course, 2025 ∼
- "Frontiers of Artificial Intelligence", doctoral course, 2025 ∼
- "Signals and Systems", undergraduate course, 2015 ∼ 2024
- "Academic Writing", graduate course, 2019 ∼ 2024