

Miao Wang

Assistant Professor

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Beihang University

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EDUCATION

- **Tsinghua University** Beijing, China
Ph.D. in Computer Science (with honors), advisor: Prof. Shi-Min Hu *Sept. 2011 – Jul. 2016*
- **Xidian University** Xi'an, Shaanxi, China
Bachelor of Engineering in Computer Science and Technology (with honors) *Sept. 2007 – Jul. 2011*

WORK & RESEARCH EXPERIENCE

- **Tsinghua University** Beijing, China
Postdoc Researcher *Jul. 2016 – Oct. 2018*
 - **Visual Computing:** Computer graphics & computer vision projects, including interactive video editing, deep learning methodology in graphics, computational cinematography and video for VR, with Prof. Shi-Min Hu.
- **Cardiff University** Cardiff, UK
Visiting Researcher *Aug. 2013 – Feb. 2014*
 - **Photo Extrapolation:** Worked on an image extrapolation project to expand the field-of-view of natural scenes using a data-driven method, with Prof. Ralph Martin and Dr. Yu-Kun Lai.

RESEARCH INTERESTS

Graphics and VR/AR: video for VR; deep learning in graphics; realistic virtual content synthesis

PUBLICATIONS

1. *Xiao-Nan Fang, **Miao Wang**, Ariel Shamir and Shi-Min Hu.* Learning Explicit Smoothing Kernels for Joint Image Filtering. Conditionally Accepted to Pacific Graphics 2019. **(CCF-B)**
2. ***Miao Wang**, Xin Wen and Shi-Min Hu.* Faithful Face Image Completion for HMD Occlusion Removal. IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct) 2019, to appear.
3. ***Miao Wang**, Guo-Ye Yang, Ruilong Li, Runze Liang, Song-Hai Zhang, Peter M. Hall and Shi-Min Hu.* Example-Guided Style-Consistent Image Synthesis from Semantic Labeling. IEEE CVPR 2019. **(CCF-A)**
4. *Shu-Yang Zhang, Run-Ze Liang and **Miao Wang**.* ShadowGAN: Shadow Synthesis for Virtual Objects with Adversarial Networks. Computational Visual Media, 5 (1), 105-115, 2019.
5. ***Miao Wang**, Guo-Ye Yang, Jin-Kun Lin, Shao-Ping Lu, Ariel Shamir and Shi-Min Hu.* Deep Online Video Stabilization With Multi-Grid Warping Transformation Learning. IEEE Transactions on Image Processing, 28 (5), 2283-2292, 2019. **(CCF-A)**
6. *Sen-Zhe Xu, Jun Hu, **Miao Wang**, Tai-Jiang Mu and Shi-Min Hu.* Deep Video Stabilization Using Adversarial Networks. Computer Graphics Forum, 37 (7), 267-276, 2018. (Pacific Graphics 2018) **(CCF-B)**
7. ***Miao Wang**, Ariel Shamir, Guo-Ye Yang, Jin-Kun Lin, Guo-Wei Yang, Shao-Ping Lu and Shi-Min Hu.* BiggerSelfie: Selfie Video Expansion with Hand-held Camera. IEEE Transactions on Image Processing, 27(12), 5854-5865, 2018. **(CCF-A)**
8. *Shao-Ping Lu, Jie You, Beerend Ceulemans, **Miao Wang** and Adrian Munteanu.* Synthesis of Shaking Video using Motion Capture data and Dynamic 3D Scene Modeling. IEEE ICIP 2018. **(CCF-C)**
9. ***Miao Wang**, Jun-Bang Liang, Song-Hai Zhang, Shao-Ping Lu, Ariel Shamir and Shi-Min Hu.* Hyper-lapse Creation from Multiple Spatially-overlapping Videos. IEEE Transactions on Image Processing, Vol.27, No.4, Pages 1735-1747, 2018. **(CCF-A)**
10. ***Miao Wang**, Xi-Jin Zhang, Jun-Bang Liang, Song-Hai Zhang and Ralph R. Martin.* Comfort-driven Disparity Adjustment for Stereoscopic Video. Computational Visual Media, 2(1), 3-17, 2016.

11. *Shao-Ping Lu, Sibor Feng, Beerend Ceulemans, Miao Wang, Rui Zhong and Adrian Munteanu*. Multiview Conversion of 2D Cartoon Images. *Communications in Information and Systems*, 16(4), 229-254, 2016.
12. *Miao Wang, Yu-Kun Lai, Yuan Liang, Ralph R. Martin and Shi-Min Hu*. BiggerPicture: Data-Driven Image Extrapolation Using Graph Matching. *ACM Transactions on Graphics*, 33(6), Article No. 173, 2014. (**SIGGRAPH Asia 2014**) (**CCF-A**)
13. *Shi-Min Hu, Fang-Lue Zhang, Miao Wang, Ralph R. Martin and Jue Wang*. PatchNet: A Patch-based Image Representation for Interactive Library-driven Image Editing. *ACM Transactions on Graphics*, 32(6), Article No. 196, 2013. (**SIGGRAPH Asia 2013**) (**CCF-A**)
14. *Fang-Lue Zhang, Miao Wang and Shi-Min Hu*. Aesthetic Image Enhancement by Dependence-Aware Object Re-Composition. *IEEE Transactions on Multimedia*, 15(7), 1480-1490, 2013. (**CCF-B**)
15. *Miao Wang, Fang-Lue Zhang and Shi-Min Hu*. Data-driven Image Analysis and Editing: A Survey. *Journal of Computer-Aided Design & Computer Graphics*, 27(11), 2015-2024, 2015. (In Chinese)

TEACHING EXPERIENCE

- **Fundamental of Computer Graphics** Tsinghua University, Beijing
Teaching Assistant *Spring 2013*
 - Assisted lecturer preparing courseware, organizing seminar and making the paper.

ACADEMIC SERVICES

- **Advisory Board:** Beijing Organizing Committee for the 2022 Olympics Winter Games, Jun.-Sept. 2018
- **Program Committee:**
 - **Workshop on Vision meets Graphics**, Nov. 2017, Wuhan, China
- **Reviewing:**
 - **Conference:** SIGGRAPH 2017, 2018; SIGGRAPH Asia 2018, 2019; Pacific Graphics 2016, 2018; ICIG 2017; CVM 2013-2019
 - **Transactions:** IEEE TVCG, CVMJ, Computer Graphics Forum, The Visual Computer, Journal of Computer Science and Technology

INVITED TALKS

- **Video Alignment Using Prominent Edges.** The 3rd Tsinghua-Cardiff workshop on Visual Computing, Sept. 2018
- **Hyper-lapse Creation from Multiple Spatially-overlapping Videos.** Top Paper Section, International Conference on Virtual Reality and Visualization, Oct. 2017
- **Multiple-source Hand-held Video Editing.** The 2nd Tsinghua-Cardiff workshop on Visual Computing, Sept. 2017
- **Data-driven Image Extrapolation.** Microsoft Research Asia PhD Forum, Sept. 2014
- **PatchNet: A Patch-based Image Representation for Interactive Library-driven Image Editing.** Visual Computing Group, Cardiff University, Nov. 2013

SELECTED AWARDS

- **National Science and Technology Progress Award:** Large-Scale Street-View System with Location-Based Service (1st Prize, 9th Achiever), 2018.

GRANTS

- **China Postdoctoral Science Foundation.** Tempo-spatial coherence analysis for camera path partition and editing, PI, 2016-2018.
- **International (regional) joint research program, National Natural Science Foundation of China.** Data-driven processing of visual media, Main Participant, 2016-2018.

ISSUED PATENTS

- **PatchNet Model and Construction Method Thereof.** Shi-Min Hu, Fang-Lue Zhang and Miao Wang, US9836880B2, 2017.
- **Aesthetic Image Enhancement by Dependence-Aware Object Re-Composition.** Shi-Min Hu, Fang-Lue Zhang and Miao Wang, CN201210455248.8, 2013.
- **Saliency-aware Video Object Cutout Based-on Super-pixel Segmentation.** Shi-Min Hu, Miao Wang, Tao Chen, Kun Xu and Jun-Jun Xiong, CN20110458008.9, 2011.