

# Jun-Yan Zhu

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## RESEARCH INTERESTS

I do research on computer vision, graphics, and machine learning. My research goal is to build machines capable of recreating our visual world.

## EDUCATION

2013 – **University of California, Berkeley**  
present Ph. D. candidate in Computer Science Division  
Advisor: Prof. Alexei A. Efros

2012 – **Carnegie Mellon University**  
2013 Ph. D. student in Computer Science Department  
Advisor: Prof. Alexei A. Efros

2008 – **Tsinghua University**  
2012 B. E. in Computer Science and Technology (with honors)

## EXPERIENCE

2013 – **Berkeley AI Research (BAIR) Lab**  
present Research assistant: Prof. Alexei A. Efros

**Google Cambridge**  
2016 Summer intern: Michael Rubinstein, Ce Liu, and William T. Freeman

**Adobe Creative Technology Lab**  
2015 Summer intern: Eli Shechtman  
2013 Summer intern: Aseem Agarwala, Eli Shechtman, and Jue Wang

2012 – **Computer Vision Group & Graphics Lab, Carnegie Mellon University**  
2013 Research assistant: Prof. Alexei A. Efros

2011 – **Microsoft Research Asia**  
2012 Intern: Prof. Zhuowen Tu and Dr. Eric Chang

2010 – **Graphics and Geometric Computing Group, Tsinghua University**  
2012 Research assistant: Prof. Shi-Min Hu and Prof. Ariel Shamir

## PUBLICATIONS

- “Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks”  
Jun-Yan Zhu\*, Taesung Park\*, Phillip Isola and Alexei A. Efros  
Arxiv, 2017
- “Real-Time User-Guided Image Colorization with Learned Deep Priors”  
Richard Zhang\*, Jun-Yan Zhu\*, Phillip Isola, Xinyang Geng, Angela S. Lin, Tianhe Yu, Alexei A. Efros  
ACM Transactions on Graphics (**SIGGRAPH**), 2017
- “Light Field Video Capture Using a Learning-Based Hybrid Imaging System”  
Ting-Chun Wang, Jun-Yan Zhu, Nima Khademi Kalantari, Alexei A. Efros, and Ravi Ramamoorthi  
ACM Transactions on Graphics (**SIGGRAPH**), 2017
- “Image-to-Image Translation with Conditional Adversarial Networks”  
Phillip Isola, Jun-Yan Zhu, Tinghui Zhou and Alexei A. Efros  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2017

- “Generative Visual Manipulation on the Natural Image Manifold”  
Jun-Yan Zhu, Philipp Krähenbühl, Eli Shechtman and Alexei A. Efros  
European Conference on Computer Vision (**ECCV**). 2016
- “A 4D Light-Field Dataset and CNN Architectures for Material Recognition”  
Ting-Chun Wang, Jun-Yan Zhu, Ebi Hiroaki, Manmohan Chandraker, Alexei A. Efros, Ravi Ramamoorthi  
European Conference on Computer Vision (**ECCV**). 2016
- “Learning a Discriminative Model for the Perception of Realism in Composite Images”  
Jun-Yan Zhu, Philipp Krähenbühl, Eli Shechtman and Alexei A. Efros  
IEEE International Conference on Computer Vision (**ICCV**). 2015
- “Mirror Mirror: Crowdsourcing Better Portraits”  
Jun-Yan Zhu, Aseem Agarwala, Alexei A. Efros, Eli Shechtman and Jue Wang  
ACM Transactions on Graphics (**SIGGRAPH Asia** 2014).
- “AverageExplorer: Interactive Exploration and Alignment of Visual Data Collections”  
Jun-Yan Zhu, Yong Jae Lee and Alexei A. Efros  
ACM Transactions on Graphics (**SIGGRAPH** 2014).
- “Unsupervised Object Class Discovery via Saliency-Guided Multiple Class Learning”  
Jun-Yan Zhu, Jiajun Wu, Yan Xu, Eric Chang and Zhuowen Tu  
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2014.
- “MILCut: A Sweeping Line Multiple Instance Learning Paradigm for Interactive Image Segmentation”  
Jiajun Wu\*, Yibiao Zhao\*, Jun-Yan Zhu, Siwei Luo and Zhuowen Tu  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2014.
- “Weakly supervised histopathology cancer image segmentation and classification”  
Yan Xu, Jun-Yan Zhu, Eric Chang, Maode Lai and Zhuowen Tu  
Medical Image Analysis (**MIA**), 2014.
- “Reverse Image Segmentation: A High-Level Solution to a Low-Level Task”  
Jiajun Wu, Jun-Yan Zhu and Zhuowen Tu  
British Machine Vision Conference (**BMVC**), 2014.
- “Motion Aware Gradient-Domain Video Composition”  
Tao Chen, Jun-Yan Zhu, Ariel Shamir and Shi-Min Hu  
IEEE Transactions on Image Processing (**TIP**), 2013.
- “Unsupervised Object Class Discovery via Saliency-Guided Multiple Class Learning”  
Jun-Yan Zhu, Jiajun Wu, Yichen Wei, Eric Chang and Zhuowen Tu.  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2012.
- “Multiple Clustered Instance Learning for Histopathology Cancer Image Classification, Segmentation and Clustering”  
Yan Xu\*, Jun-Yan Zhu\*, Eric Chang and Zhuowen Tu  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2012.

## **SELECTED AWARDS**

- Facebook Graduate Fellowship (2015 – 2017)
- Outstanding Undergraduate Thesis in Tsinghua University (2012)
- Excellent Undergraduate Student in Tsinghua University (2012)
- National Scholarship, by Ministry of Education of China (2009 and 2010)
- Singapore Technologies Engineering China Scholarship (2010, 2011, and 2012)

## **RECENT TALKS**

- “Visual Manipulation and Synthesis on the Natural Image Manifold”  
Facebook, Berkeley BAIR, Tsinghua, MSR, Fudan Univ, ICML 16' workshop "Visualization for Deep Learning" (2016)
- “Mirror Mirror: Crowdsourcing Better Portraits”  
ACM SIGGRAPH Asia 2014 (Dec 2014)
- “What Makes Big Visual Data Hard?”  
ACM SIGGRAPH Asia 2014 invited course "Data-Driven Visual Computing" (Dec 2014)
- “AverageExplorer: Interactive Exploration and Alignment of Visual Data Collections”  
ACM SIGGRAPH 2014 (Aug 2014)
- “Discovering Objects and Harvesting Visual Concepts via Weakly Supervised Learning”  
Berkeley Visual Computing Lab Noon Talk (Mar 2014)

## **SELECTED PRESS**

- Forbes: *New Adobe-Funded Tech Converts Scribbles into Realistic Photos*
- The Next Web: *Adobe and Berkeley's new smart editing tool will blow your mind*
- NVIDIA News: *Artificial Intelligence Software Easily Generates Digital Art*
- QUARTZ: *This digital brush paints with the memories of 275,000 landscapes*
- PetaPixels: *Adobe is Working on Some Crazy AI-Powered Features, Here's a Peek*
- DigitalTrends: *Adobe and UC Berkeley team up to develop neural network image editor*
- Gizmodo: *Adobe has taken Photoshop and infused it*
- DPReview: *Adobe and UC Berkeley demonstrate image editing tool powered by machine learning*
- Hacker News: *Deep learning software that generates images with a few brushstrokes*
  
- The New Yorker: *One of Many, One: The Science of Composite Photography*
- Smithsonian Magazine: *Software Creates One Picture That Says It All*
- Berkeley News: *New tool makes a single picture worth a thousand – and more – images*
- Gizmodo: *This Clever Image Search Could Change the Way You Find Pictures Online*
- Futurity: *Tool combines thousands of images into one photo*
- Gizmag: *Software combines thousands of online images into one that represents them all*
- Yahoo: *Algorithm takes the 'average' of photos, perhaps proving that is how you always look*
- Science 2.0: *A Picture Is Worth 1,000 Words - And Maybe 100,000 Other Pictures*

## **US PATENTS**

- “Unsupervised Object Class Discovery via Bottom-Up Multiple Class Learning”, US 20140140610
- “Multiple Clustered Instance Learning for Image Classification”, US 20140270495