

Jun-Yan Zhu

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RESEARCH INTERESTS

Computer Graphics, Computer Vision, Machine Learning

EDUCATION

- 2013 – **University of California, Berkeley**
- 2017 Ph. D. in Computer Science, EECS
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 (Rank 2/140)

EXPERIENCE

- 2018 – **MIT Computer Science and Artificial Intelligence Laboratory**
Postdoc with Prof. Antonio Torralba, Prof. Bill Freeman, and Prof. Josh Tenenbaum
- 2013 – **Berkeley AI Research (BAIR) Lab**
- 2017 Research assistant with Prof. Alexei A. Efros
- 2016 **Google Cambridge**
Intern with Ce Liu, Michael Rubinstein, and William T. Freeman
- 2013- **Adobe Creative Technology Lab**
- 2017 Intern with Eli Shechtman ('13, '15, '17), Oliver Wang ('17), Aseem Agarwala and Jue Wang ('13)
- 2012 – **Computer Vision Group & Graphics Lab, Carnegie Mellon University**
- 2013 Research assistant with Prof. Alexei A. Efros
- 2011 – **Microsoft Research Asia**
- 2012 Intern with Prof. Zhuowen Tu and Dr. Eric Chang
- 2010 – **Graphics and Geometric Computing Group, Tsinghua University**
- 2012 Research assistant with Prof. Shi-Min Hu

PUBLICATIONS

- “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
- “Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks”
Jun-Yan Zhu*, Taesung Park*, Phillip Isola, Alexei A. Efros
IEEE International Conference on Computer Vision (**ICCV**). 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

“Toward Multimodal Image-to-Image Translation”

Jun-Yan Zhu, Richard Zhang, Deepak Pathak, Trevor Darrell, Alexei Efros, Oliver Wang, Eli Shechtman
Neural Information Processing System (**NIPS**). 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

PREPRINTS

“Spatially Transformed Adversarial Examples”

Chaowei Xiao*, Jun-Yan Zhu*, Bo Li, Warren He, Mingyan Liu, Dawn Song
arXiv:1801.02612, 2018

“Generating Adversarial Examples with Adversarial Networks”

Chaowei Xiao, Bo Li, Jun-Yan Zhu, Warren He, Mingyan Liu, Dawn Song
arXiv:1801.02610, 2018

“High-Resolution Image Synthesis and Semantic Manipulation with Conditional GANs”

Ting-Chun Wang, Ming-Yu Liu, Jun-Yan Zhu, Andrew Tao, Jan Kautz, Bryan Catanzaro
arXiv:1711.11585, 2017

“CyCADA: Cycle-Consistent Adversarial Domain Adaptation”

Judy Hoffman, Eric Tzeng, Taesung Park, Jun-Yan Zhu, Phillip Isola, Kate Saenko, Alexei A. Efros, Trevor Darrell
arXiv:1711.03213, 2017

SELECTED AWARDS

CVPR Outstanding Reviewer Award (2017)

Facebook Graduate Fellowship (2015)

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)

TALKS

“Learning to Synthesize and Manipulate Natural Photos” (2017)

MIT CSAIL, HKUST CSE Departmental Seminar, ICCV tutorial on GANs
O'Reilly AI, AI with the best, Y Conf, DEVIEW, ODSC West

“On Image-to-Image Translation” (2017)

Stanford, Facebook, CUHK, SNU

“Interactive Deep Colorization” (2017)

SIGGRAPH, NVIDIA Innovation Theater, Global AI Hackathon

“Visual Manipulation and Synthesis on the Natural Image Manifold” (2016)

Facebook, Berkeley BAIR, Tsinghua, MSR, Fudan Univ, ICML VDL workshop

“Mirror Mirror: Crowdsourcing Better Portraits” (2014)

SIGGRAPH Asia

“What Makes Big Visual Data Hard?” (2014)

SIGGRAPH Asia invited course “Data-Driven Visual Computing”

“AverageExplorer: Interactive Exploration and Alignment of Visual Data Collections” (2014)

SIGGRAPH

“Discovering Objects and Harvesting Visual Concepts via Weakly Supervised Learning” (2014)

Berkeley VCL

PATENTS

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

SELECTED PRESS

Interactive Deep Colorization [SIGGRAPH 2017]

The Next Web: Neural networks can now help you colorize old photos like a pro
Forbes: Deep Learning and Neural Networks
ScienceDaily: Colorizing images with deep neural networks
Smithsonian: New App Makes It Easier to Colorize Old Photos
PetaPixel: AI-Powered App Helps You Colorize Black & White Photos in Seconds

CycleGAN [ICCV 2017]

Forbes: What's Next for Deep Learning?
Wired: Artificial Intelligence is Killing the Uncanny Valley and our Grasp on Reality
NVIDIA Blog: What's a Generative Adversarial Network? Leading Researcher Explains
Microsoft Blog: Learning Image to Image Translation with CycleGANs
Computer Vision News: Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks
The Next Web: This artificial intelligence turns horses into zebras – and winter into summer
Engadget: 'Reverse Prisma' AI turns Monet paintings into photos
DPRReview: Image style AI can convert paintings to photographs
PetaPixel: This AI Can Convert Paintings Into Photos and Summer Into Winter
Gizmodo: Someone Finally Hijacked Deep Learning Tech to Create More Than Nightmares

pix2pix [CVPR 2017]

The Economist: Fake news: you ain't seen nothing yet
Forbes: How Drawing Became The Gateway To AI Communication
New York Magazine: This New AI Tool Makes Great Art. It Could Also Make Great Fake News

iGAN [ECCV 2016]

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 Blog: 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
DPRReview: Adobe and UC Berkeley demonstrate image editing tool powered by machine learning

AverageExplorer [SIGGRAPH 2014]

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