

Zexiang Xu

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Research Interest

- My research interests are in computer graphics and computer vision, including relighting, view synthesis, appearance modeling, appearance acquisition, rendering, 3D reconstruction and light fields.

EDUCATION

- Sep. 2015 – present Ph.D. University of California, San Diego
Computer Science & Engineering Department
- Sep. 2012 – Jan. 2015 M. S. Beihang University, Beijing, China
School of Computer Science & Engineering
- Sep. 2008 – Jul. 2012 B. S. Beihang University, Beijing, China
School of Advanced Engineering (an elite program)

EXPERIENCE

Sep. 2015 - present **Center for Visual Computing** **University of California, San Diego**
Research Assistant Advisor: Prof. Ravi Ramamoorthi

- Research on image-based image synthesis
 - High-quality image-based relighting from very sparse samples (only five images) using deep learning.
 - High-quality view synthesis from six widely spaced views using deep learning.
- Research on reflectance and shape reconstruction
 - BRDF acquisition of a flat material using only two near-field images.
 - Shape and SVBRDF estimation from a single RGB image using deep learning.
- Other research projects, including depth reconstruction from light fields, appearance modeling using neural networks, etc.

June. 2019 - Sep. 2019 **Computer Graphics** **Facebook Reality Labs**
Research Intern Mentors: Feng Xie and Anton Kaplanyan

- Research on learning and rendering.

June. 2018 - Sep. 2018 **Procedural Imaging Group** **Adobe Research**
Research Intern Mentors: Sunil Hadap and Kalyan Sunkavalli

- Research on deep-learning and view synthesis.

June. 2017 - Sep. 2017 **Procedural Imaging Group** **Adobe Research**
Research Intern Mentors: Kalyan Sunkavalli and Sunil Hadap

- Research on deep-learning, appearance capture and image-based relighting.

Apr. 2013 - Sep. 2014 **Internet Graphics Group** **Microsoft Research Asia**
Research Intern Mentors: Lvdi Wang and Xin Tong

- Research on hair capture.

Sep. 2011 – Jan. 2015 **State Key lab of Virtual Reality** **Beihang University**
Research Assistant Advisors: Prof. Yue Qi and Prof. Qinqing Zhao

- Research on water simulation and rendering.

PUBLICATIONS

- Alexandr Kuznetsov, Miloš Hašan, **Zexiang Xu**, Ling-Qi Yan, Bruce Walter, Nima Khademi Kalantari, Steve Marschner, Ravi Ramamoorthi, "Learning Generative Models for Rendering Specular Microgeometry", (accepted to) ACM Transactions on Graphics (SIGGRAPH Asia 2019).
- **Zexiang Xu**, Sai Bi, Kalyan Sunkavalli, Sunil Hadap, Hao Su, Ravi Ramamoorthi, "Deep View Synthesis from Sparse Photometric Images", ACM Transactions on Graphics (SIGGRAPH 2019).
- Tiancheng Sun, Jonathan T. Barron, Yun-Ta Tsai, **Zexiang Xu**, Xueming Yu, Graham Fyffe, Christoph Rhemann, Jay Busch, Paul Debevec, Ravi Ramamoorthi, "Single Image Portrait Relighting", ACM Transactions on Graphics (SIGGRAPH 2019).
- Zhengqin Li, **Zexiang Xu**, Ravi Ramamoorthi, Kalyan Sunkavalli, and Manmohan Chandraker, "Learning to Reconstruct Shape and Spatially-Varying Reflectance from a Single Image", ACM Transactions on Graphics (SIGGRAPH Asia 2018).
- **Zexiang Xu**, Kalyan Sunkavalli, Sunil Hadap, Ravi Ramamoorthi, "Deep Image-based Relighting using Optimal Sparse Samples", ACM Transactions on Graphics (SIGGRAPH 2018).
- Zhengqin Li, **Zexiang Xu**, Ravi Ramamoorthi, Manmohan Chandraker, "Robust Energy Minimization for BRDF-Invariant Shape from Light Fields", CVPR 2017
- **Zexiang Xu**, Jannik Boll Nielsen, Jiyang Yu, Henrik Wann Jensen, Ravi Ramamoorthi, "Minimal BRDF Sampling for Two-Shot Near-Field Reflectance Acquisition", ACM Transactions on Graphics (SIGGRAPH Asia 2016).
- Jiyang Yu, **Zexiang Xu**, Matteo Mannino, Henrik Wann Jensen, Ravi Ramamoorthi. "Sparse Sampling for Image-Based SVBRDF Acquisition", Workshop on Material Appearance Modeling. The Eurographics Association, 2016.
- **Zexiang Xu**, Hsiang-Tao Wu, Lvdi Wang, Changxi Zheng, Xin Tong, Yue Qi, "Dynamic Hair Capture using Spacetime Optimization", ACM Transactions on Graphics (SIGGRAPH Asia 2014).

SELECTED HONORS

- 2019 Doctoral Award for Excellence in Research, CSE department at UC San Diego
- 2019 Adobe Research Fellowship, Adobe Research
- 2015 Powell (Bundle) Fellowship, UC San Diego
- 2015 Excellent graduate of Beijing, Beijing Municipal Commission of Education
- 2014 National Scholarship for Graduate Students, China's Ministry of Education
- 2014 MSRA Internship Excellence Award, Microsoft Research Asia
- 2010 Second Prize in National Undergraduate Mathematical Contest in Modeling
- 2008 Freshman Scholarship, Beihang University

SKILLS

- Programming: Python, C/C++
- Tools and libraries: Tensorflow, Pytorch, Qt, OpenCV, OpenGL