Xuan Luo
Curriculum Vitae

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Education

2015–now   **Ph.D., Computer Science and Engineering**, *University of Washington*, Seattle, WA, US.
○ Advisors: ***Steven M. Seitz***, ***Jason Lawrence*** and ***Ricardo Martin Brualla***.

2011–2015   **B.S., Computer Science and Technology**, *Shanghai Jiao Tong University (SJTU)*, China.

Program   ***ACM Honored Class*** (a pilot computer science class in China), Zhiyuan College

9.2014-2.2015   **Visiting Scholar**, *National University of Singapore*, Singapore.

Work Experience

2019 summer   **Research Intern**, *Facebook*, Seattle, WA, USA.
Worked with Johannes Kopf, Kevin Matzen and Richard Szeliski.

2017 summer   **Research Intern**, *Disney Research*, Zurich, Switzerland.
Worked on face performance capture with Thabo Beeler, Derek Bradley, Matthias Niessner and Paulo Gotardo.

2016 summer   **Software Engineering Intern**, *Google Daydream*, Seattle, WA, USA.
Worked with Jason Lawrence on utilizing spatial-temporal consistency to denoise 3D models.

Research Interests

Augmented/Virtual Reality	*Novel View Synthesis, Computational Display*
Computer Vision	*Inpainting, Depth, Stereo Matching, Deep Learning, Face Performance Capture*
Graphics	

Honors and Awards

2018	Pepper's Cone highlighted in "Demo Hour" of *ACM Interactions Magazine*	*link*
2018	Press coverage for Pepper's Cone: Hacker News, iProgrammer, Hack a Day	
2015	Distinguished Graduate Scholarship, SJTU	*Top 1%*
2015	Shanghai Outstanding Graduate	*Top 1%*
2013	National Scholarship, China	*Highest scholarship in China, top 1%*
2012	Kai Yuan Scholarship, SJTU	*Top 2%*

Publications

Xuan Luo, Jia-Bin Huang, Richard Szeliski, Kevin Matzen, Johannes Kopf. *"Consistent Video Depth Estimation"*. SIGGRAPH, 2020.

Xuan Luo, Yanmeng Kong, Jason Lawrence, Ricardo Martin Brualla, Steven M. Seitz. *"KeystoneDepth: Visualizing History in 3D"*. arXiv:1908.07732, 2019.

Xuan Luo, Jason Lawrence, Steven M. Seitz. *"Pepper's Cone: An Inexpensive Do-It-Yourself 3D Display"*. UIST, 2017.

Min Lin, Shuo Li, **Xuan Luo**. *"Purine: A Graph-based Deep Learning Framework"*. International Conference on Learning Representations (ICLR), 2015.

Xuejiao Bai, **Xuan Luo**, Shuo Li. *"Adaptive Stereo Matching via Loop-erased Random Walk"*. IEEE International Conference on Image Processing (ICIP), 2014.

Research Experience

Video Depth

Advisor   Jia-Bin Huang, Richard Szeliski, Kevin Matzen, Johannes Kopf, Facebook & Virginia Tech

6.2019-3.2020   **Consistent Video Depth Estimation**, SIGGRAPH 2020, https://roxanneluo.github.io/Consistent-Video-Depth-Estimation/.
Our geometrically consistent depth enables cool video effects to a whole new level.

Novel View Synthesis and Dataset

Advisor   Steven M. Seitz, Jason Lawrence, Ricardo Martin Brualla, University of Washington & Google

2.2017-3.2019   **KeystoneDepth: History in 3D**, *http://roxanneluo.github.io/KeystoneDepth.html*.
Is it possible to see Mark Twain in 3D with full 6 degree-of-freedom? We collected a big dataset of historical stereographs called KeystoneDepth and enabled visualizing tons of historical scenes in 6 DoF.

Computational Display

Advisor   Steven M. Seitz, Jason Lawrence, University of Washington, US

10.2015-4.2017   **Pepper's Cone**, UIST 2017, *https://roxanneluo.github.io/PeppersCone.html*.
Fold a piece of plastic sheet into a cone. Together with your tablet, you can build the Pepper's Cone to observe the "hologram" of your 3D scene in a fun and compelling way.

Stereo Matching

Advisor   Hongtao Lu, Center for Brain-like Computing and Machine Intelligence, SJTU, China

8.2013-1.2014   **Adaptive Stereo Matching via Loop-erased Random Walk,** *ICIP 2014*, *http://bcmi.sjtu.edu.cn/∼luoxuan/papers/icip2014.pdf* .
Generating spanning tree by Loop-erased Radom Walk helps to create adaptive support window and achieve better results especially over curved & slanted surfaces.

2.2014-8.2014   **Fast Non-local Stereo Matching based on Hierarchical Disparity Prediction**.
code: https://github.com/roxanneluo/Hierarchical-Disparity-Prediction

A new framework that improves almost all tree-based algorithms in both speed and accuracy.

Deep Learning

Advisor   Shuicheng Yan, Learning and Vision Research Group, National University of Singapore

8.2014-10.2014   **Purine**, ICLR 2015, *https://github.com/purine/purine2* .
A flexible graph-based parallel deep learning framework allowing any kind of parallelism, both data and model parallelism, arbitrary network structure (e.g., recurrent neural network), and can utilize unlimited number of CPUs and GPUs.

Teaching

9.2018-12.2018   VR Capstone, CSE481V, UW   *Teaching Assistant*

1.2019-3.2019   Selected Topics in Computational Fabrication, CSE599J1, UW   *Teaching Assistant*

Course Projects

Codes of some projects available at https://github.com/roxanneluo

2016.6   HoloCook, C#, AR/VR Capstone   *Cooking Tutorial app on Hololens*

2016.6   Become Brad Pitt, C++, Computer Vision   *Facial Puppetry*

2015.11   Environment Matting, C++&Python, Graphics   *Composition of Refractive Objects*

Skills

Languages   C++, Python, Matlab, Java, HTML, LaTeX, MySQL, C#,PHP, Verilog, OpenGL,TinyOS

Tools   Unity, Photoshop

Specialty

Fine Arts   Good at painting. My portfolio available at https://photos.app.goo.gl/QtGANBN2gAcajLza9