XUAN LUO

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EDUCATION

University of Washington | ***PhD Student in Computer Science & Engineering*** Sept. 2015 – 2021 (expected)
Advisors: Steven M. Seitz, Jason Lawrence, and Ricardo Martin-Brualla. Seattle, WA

Shanghai Jiao Tong University | ***BS in Computer Science & Technology*** Sept. 2011 – July 2015
ACM Honors Class (one of the top gifted CS programs in China). Shanghai, China

RESEARCH INTERESTS

Augmented/Virtual Reality, 3D Vision, Computational Photography, Image Synthesis

PROFESSIONAL EXPERIENCE

University of Washington | ***Graduate Student Researcher*** 2015 – now
Advisors: Steven M. Seitz, Jason Lawrence and Ricardo Martin-Brualla Seattle, WA

- Restored what famous historical figures would look like if rephotographed with modern cameras.
- Collected a large-scale rectified historical stereo dataset and visualized historical scenes in 3D.
- Designed an inexpensive glass-free DIY 3D display with a tablet and a plastic sheet folded into a cone.

Facebook | ***Research Intern*** June 2019 – March 2020
Mentor: Johannes Kopf. Collaborators: Jia-bin Huang, Kevin Matzen and Richard Szeliski Seattle, WA

- Estimated geometrically consistent depth from monocular videos, enabling video effects to a whole new level.

Disney Research Zurich | ***Research Intern*** Summer 2017
Collaborators: Thabo Beeler, Derek Bradley, Matthias Niessner, and Paulo Gotardo. Zurich, Switzerland

- Worked on facial motion capture.

Google Daydream | ***Software Engineering Intern*** Summer 2016
Collaborators: Jason Lawrence Seattle, WA

- Worked on utilizing spatial-temporal consistency to denoise 3D models.

National University of Singapore | ***Visiting Scholar*** Aug. 2014 – Feb. 2015
Advisor: Shuicheng Yan Singapore

- Co-designed a flexible graph-based parallel deep learning framework allowing data/model parallelism, arbitrary network deployment (e.g., recurrent neural network), and unlimited CPU/GPU usage.

Shanghai Jiao Tong University | ***Undergraduate Researcher*** Aug. 2013 – Aug. 2014
Advisors: Hongtao Lu

- Designed a new stereo matching method with better adaptive support window for curved & slanted surfaces.
- Proposed a new framework that improves tree-based stereo matching methods in speed & accuracy.

PUBLICATIONS

Time-Travel Rephotography | ***arXiv:2012.12261*** 2020
Xuan Luo, Cecilia Zhang, Paul Yoo, Ricardo Ricardo Martin-Brualla, Jason Lawrence, and Steven M. Seitz

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

KeystoneDepth: History in 3D | ***International Virtual Conference on 3D Vision*** 3DV 2020
Xuan Luo, Yanmeng Kong, Jason Lawrence, Ricardo Martin-Brualla, and Steven M. Seitz

Slow Glass: Visualizing History in 3D | ***Fourth Workshop on Computer Vision for AR/VR*** CVPR-W 2020
Xuan Luo, Yanmeng Kong, Jason Lawrence, Ricardo Martin-Brualla, and Steven M. Seitz

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

Purine: A Graph-based Deep Learning Framework ICLR 2015
Min Lin, Shuo Li, **Xuan Luo**, and Shuicheng Yan

Adaptive Stereo Matching via Loop-erased Random Walk ICIP 2014
Xuejiao Bai, **Xuan Luo**, Shuo Li, and Hongtao Lu

HONORS AND AWARDS

Selected EECS Rising Star by EECS at UC Berkeley Nov. 2020
Anne Dinning - Michael Wolf Endowed Regental Fellowship, UW 2015 – 2016
Distinguished Undergraduate Scholarship, SJTU 2015
Shanghai Outstanding Graduate, Shanghai 2015
National Scholarship, China | *Highest scholarship in China* 2013
Kai Yuan Scholarship, SJTU 2012
2012 University Physics Competition, Silver Medal, USA 2012

MEDIA & PRESS

Time-Travel Rephotography 2020
Two Minute Papers, GIZMODO, Hack a Day, QubitAI, Guokr, Tencent, marktechpost.com, TechTheLead, Tech Times, The Science Times, Review Geek, Tech Explore, msnice.net, kknews.cc

Consistent Video Depth 2020
Two Minute Papers, QubitAI, Synced, Medium, Bo Yu AI

Pepper's Cone 2018
"Demo Hour" of *ACM Interactions Magazine*, iProgrammer, Hack a Day, Hacker News

INVITED TALKS

A Celebration of Stereoscopic 3D by London Stereoscopic Archive et al., UK Feb. 2021
"Computational Time Machine". Host: Denis Pellerin and Rebecca Sharpe

GAMES: Graphics and Mixed Environment Seminar Dec. 2020
"Consistent Video Depth Estimation". Host: Zhaopeng Cui and Xiaoguang Han

AAA Alumni Association Cloud Conference May 2020

Apple, Seattle, WA May 2020
"Consistent Video Depth Estimation". Host: Qi Shan

PROFESSIONAL SERVICE

WiGRAPH: Women in Graphics Research (wigraph.org) Fall 2020 – now
Communications Director

CV/ML Graduate School Prep Workshop April 2021
Guest speaker & Panel member
Help undergrads of underrepresented groups to prepare for graduate-level study.

Ph.D. Admission Committee, Univeristy of Washington 2018

ACM-W Undergraduate Mentorship Spring 2017
Mentored three women undergrads.

Paper Reviewer

- The ACM Special Interest Group on Computer Graphics (**SIGGRAPH**)
- Conference on Computer Vision and Pattern Recognition (**CVPR**)
- International Conference on Computer Vision (**ICCV**)
- The Association for the Advancement of Artificial Intelligence (**AAAI**)

Teaching Experience

CSE576: Computer Vision Nov. 2020
Guest Lecturer, University of Washington

CSE590B: Computer Vision & Graphics Seminar Spring 2019
Graduate Student Instructor, University of Washington

CSE599J1: Selected Topics in Computational Fabrication Winter 2019
Teaching Assistant, University of Washington

CSE481V: CSE Virtual and Augmented Reality Capstone Fall 2018
Teaching Assistant, University of Washington

Research Mentoring

Paul (Seok Hyun) Yoo Fall 2019 – Spring 2021
Undergraduate student at University of Washington

- Worked on restoring high-quality color images of historical figures.

Yanmeng (Anny) Kong 2017 – Spring 2021
Master student at University of Washington

- Worked on collecting a large-scale historical stereo dataset, *KeystoneDepth*. Work published at *3DV 2020*.

Skills

Programming Languages: C++, Python, Matlab, Java, HTML, LaTeX,C#, PHP, Verilog, TinyOS
Tools: PyTorch, Tensorflow, Unity, Photoshop, MySQL, OpenGL

Specialty

Fine Arts: Good at painting. My drawings are available at here.