

LIFAN WU

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Homepage: <http://winmad.github.io>

EDUCATION

University of California, San Diego, La Jolla, CA September 2015 – July 2020
Ph.D. in Computer Science
Advisor: [Prof. Ravi Ramamoorthi](#)

Tsinghua University, Beijing, China August 2011 – July 2015
B.Eng. in Computer Science & Technology
Institute for Interdisciplinary Information Sciences
Special Pilot Computer Science Class ([Yao Class](#))

WORK EXPERIENCE

NVIDIA, Redmond, WA August 2020 – Present
Research Scientist

PUBLICATION

Differentiable Time-Gated Rendering

Lifan Wu*, [Guangyan Cai*](#), [Ravi Ramamoorthi](#), [Shuang Zhao](#) (* equal contribution)
ACM Transactions on Graphics (SIGGRAPH Asia 2021), 40(6), December 2021

Vectorization for Fast, Analytic, and Differentiable Visibility

[Yang Zhou](#), **Lifan Wu**, [Ravi Ramamoorthi](#), [Ling-Qi Yan](#)
ACM Transactions on Graphics (presented at SIGGRAPH 2021), 40(3), June 2021

Analytic Spherical Harmonic Gradients for Real-Time Rendering with Many Polygonal Area Lights

Lifan Wu, [Guangyan Cai](#), [Shuang Zhao](#), [Ravi Ramamoorthi](#)
ACM Transactions on Graphics (SIGGRAPH 2020), 39(4), July 2020

A Differential Theory of Radiative Transfer

[Cheng Zhang](#), **Lifan Wu**, [Changxi Zheng](#), [Ioannis Gkioulekas](#), [Ravi Ramamoorthi](#), [Shuang Zhao](#)
ACM Transactions on Graphics (SIGGRAPH Asia 2019), 38(6), November 2019

Accurate Appearance Preserving Prefiltering for Rendering Displacement-Mapped Surfaces

Lifan Wu, [Shuang Zhao](#), [Ling-Qi Yan](#), [Ravi Ramamoorthi](#)
ACM Transactions on Graphics (SIGGRAPH 2019), 38(4), July 2019

Multiple Axis-Aligned Filters for Rendering of Combined Distribution Effects

Lifan Wu, [Ling-Qi Yan](#), [Alexandr Kuznetsov](#), [Ravi Ramamoorthi](#)
Computer Graphics Forum (EGSR 2017), 36(4), June 2017

Downsampling Scattering Parameters for Rendering Anisotropic Media

[Shuang Zhao*](#), **Lifan Wu***, [Frédéric Durand](#), [Ravi Ramamoorthi](#) (* joint first authors)
ACM Transactions on Graphics (SIGGRAPH Asia 2016), 35(6), November 2016

Anisotropic Density Estimation for Photon Mapping

Fujun Luan, Lifan Wu, Kun Xu

Computational Visual Media, 1(3), September 2015

INTERNSHIPS

| | |
|--|------------------------|
| NVIDIA Research , real-time rendering group | June 2019 – Sept. 2019 |
| NVIDIA Research , real-time rendering group | June 2018 – Sept. 2018 |
| Disney Research Zurich , rendering group | June 2017 – Sept. 2017 |
| Google , map group | June 2016 – Sept. 2016 |

TEACHING

| | | |
|---------------------------|------------------------------------|-------------|
| Teaching Assistant | CSE 167, Computer Graphics | Winter 2019 |
| Course Staff | CSE 167x, Computer Graphics on edX | 2018 – 2020 |

REVIEWER

ACM SIGGRAPH, ACM SIGGRAPH Asia, Eurographics, Pacific Graphics, ICCV, ACM Symposium on Virtual Reality Software and Technology (VRST), Computer Graphics Forum (CGF), Computers & Graphics (CAG), International Journal of Computer Vision (IJCV)

HONORS AND AWARDS

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| ACM SIGGRAPH Thesis Fast Forward Finalists | 2020 |
| NVIDIA Graduate Fellowship | 2019 – 2020 |
| Professional Excellence Scholarship , Tsinghua University | 2014 |
| Tsinghua-Baidu Scholarship , Tsinghua University | 2013 |
| Fellowship of Tsinghua Xuetaang Talents Program , Tsinghua University | 2012 – 2015 |
| Among top 300 / 3000 Tsinghua students each year. | |
| Silver Medal , Chinese National Olympiad in Informatics | Aug. 2010 |
| Gold Medal , Asia-Pacific Informatics Olympiad | May 2010 |
| Ranked 2nd place out of 350 contestants. | |

SKILLS

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| Programming Languages | C/C++, Python, Matlab, Java, Ruby |
| Softwares & Applications | Mitsuba, PyTorch, TensorFlow, OptiX, PBRT, CUDA |