Ling-Qi Yan

Curriculum Vitae

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Education

2013 - 2018 **University of California, Berkeley**
Ph.D. in Computer Science
Advisor: Prof. Ravi Ramamoorthi
Dissertation: *Physically-based Modeling and Rendering of Complex Visual Appearance*

2009 - 2013 **Tsinghua University, Beijing, China**
B.E. in Computer Science and Technology
Advisors: Prof. Shi-Min Hu and Prof. Kun Xu
Thesis: *A Survey on Real-time Soft Shadow Rendering Techniques*

Employment

Summer 2017 **Intern at NVIDIA, Redmond**
Real-time ray tracing and reconstruction

Summer 2016 **Intern at Weta Digtal, Wellington**
Photorealistic cloth appearance modeling with ply level details

Summer 2015 **Intern at Autodesk, San Francisco**
Pre-computed real-time glints rendering

Summer 2014 **Technical intern at Walt Disney Animation Studios, Burbank**
Volumetric hair modeling and rendering for production

Research Interests and Impact

My research is in Computer Graphics, mainly aimed at rendering photo-realistic visual appearance at real world complexity, building theoretical foundations mathematically and physically to reveal the principles of the visual world. My research interests include appearance modeling, real-time ray tracing, sampling and reconstruction theory, volumetric scattering and light transport algorithms.

I have brought original research topics to Computer Graphics, such as detailed rendering from microstructure and real-time sampling and reconstruction for ray tracing. I have to date published 10 papers, including 6 first authored ACM SIGGRAPH/ACM TOG papers.

Teaching Experience

2014 - Course staff of edX online course CSE167x (Computer Graphics)

Spring 2018 Graduate Student Instructor (GSI) of *CS184* and *CS284A* (Computer Graphics for UG/G)

Spring 2017 Guest lecturer of *CS184* and *CS284A*
Graphics Pipeline
Global Illumination & Path Tracing
Advanced Topics on Appearance Modeling

Spring 2017 Graduate Student Instructor (GSI) of *CS184* and *CS284A*

Fall 2011 Undergraduate TA of *Algorithms & Data Structures*

Fall 2009 Undergraduate TA of *Introduction to Programming*

Publications

SIGGRAPH/ToG

1. A BSSRDF Model for Efficient Rendering of Fur with Global Illumination
Ling-Qi Yan, Weilun Sun, Henrik Wann Jensen, Ravi Ramamoorthi
ACM Transactions on Graphics 36(6) [SIGGRAPH Asia 2017]

2. An Efficient and Practical Near and Far Field Fur Reflectance Model
Ling-Qi Yan, Henrik Wann Jensen, Ravi Ramamoorthi
ACM Transactions on Graphics 36(4) [SIGGRAPH 2017]

3. Antialiasing Complex Global Illumination Effects in Path-space
Laurent Belcour, **Ling-Qi Yan**, Ravi Ramamoorthi, Derek Nowrouzezahrai
ACM Transactions on Graphics 36(1) [2016, Presented at SIGGRAPH 2017]

4. Position-Normal Distributions for Efficient Rendering of Specular Microstructure
Ling-Qi Yan, Miloš Hašan, Steve Marschner, Ravi Ramamoorthi
ACM Transactions on Graphics 35(4) [SIGGRAPH 2016]

5. Physically-Accurate Fur Reflectance: Modeling, Measurement and Rendering
Ling-Qi Yan, Chi-Wei Tseng, Henrik Wann Jensen, Ravi Ramamoorthi
ACM Transactions on Graphics 34(6) [SIGGRAPH Asia 2015]

6. Fast 4D Sheared Filtering for Interactive Rendering of Distribution Effects
Ling-Qi Yan, Soham Uday Mehta, Ravi Ramamoorthi, Fredo Durand
ACM Transactions on Graphics 35(1) [2015, Presented at SIGGRAPH 2016]

7. Rendering Glints on High-Resolution Normal-Mapped Specular Surfaces
Ling-Qi Yan, Miloš Hašan, Wenzel Jakob, Jason Lawrence, Steve Marschner, Ravi Ramamoorthi
ACM Transactions on Graphics 33(4) [SIGGRAPH 2014]

8. Discrete Stochastic Microfacet Models
Wenzel Jakob, Miloš Hašan, **Ling-Qi Yan**, Jason Lawrence, Ravi Ramamoorthi, Steve Marschner
ACM Transactions on Graphics 33(4) [SIGGRAPH 2014]

EGSR/CGF

9. Multiple Axis-Aligned Filters for Rendering of Combined Distribution Effects
Lifan Wu, **Ling-Qi Yan**, Alexandr Kuznetsov, Ravi Ramamoorthi
Computer Graphics Forum 36(4) [EGSR 2017]

10. Accurate Translucent Material Rendering under Spherical Gaussian Lights
Ling-Qi Yan, Yahan Zhou, Kun Xu, Rui Wang
Computer Graphics Forum 31(7) [Pacific Graphics 2012]

Selected Honors and Awards

Scholarships	C.V. Ramamoorthy Distinguished Research Award	2017 - 2018
Fellowships	NVIDIA Graduate Fellowship	2017 - 2018
	Extraordinary Performance Scholarship	2011 - 2013
	National Scholarship	2010 - 2011
Production	*War for the Planet of the Apes*: animal fur appearance model	2016
Media/Press	Press Releases: Apple News, Digital Trends, Engadget, etc. AI is making more realistic CG animal fur	2018
	SIGGRAPH Asia 2017 Cover/Title page A BSSRDF Model for Efficient Rendering of Fur with Global Illumination	2018
	SIGGRAPH 2017 Technical Papers Preview Trailer An Efficient and Practical Near and Far Field Fur Reflectance Model	2017
	Press Releases: UCSD, PhysOrg, Digital Trends, Eureka Alert and Tech Crunch	2016

Computer scientists find way to make all that glitters more realistic in computer graphics

Press Releases: 4Gamer (Japanese), Tencent (Chinese) 2015

Frontier Research on Realistic Fur Rendering

SIGGRAPH 2014 Technical Papers Preview Trailer 2014

Rendering Glints on High-Resolution Normal-Mapped Specular Surfaces

Discrete Stochastic Microfacet Models

Two Minute Papers 2017

#183: Photorealistic Fur With Multi-Scale Rendering

#193: Light Transport on Specular Microstructure

Contest Silver Medal, ACM/ICPC 2010-2011 Programming Contest, Harbin Regional Sep 2010

Professional Services

Peer Reviews ACM SIGGRAPH

ACM SIGGRAPH Asia

ACM Transactions on Graphics (ToG)

Eurographics Symposium on Rendering (EGSR)

IEEE Transactions on Visualization and Computer Graphics (TVCG)

Computer Graphics Forum (CGF)

Pacific Graphics (PG)

Computational Visual Media (CVM)

Journal of Computer Science and Technology (JCST)

Selected Talks

Invited Talks Distance-aware Filtering For Physically-based Monte Carlo Rendering Reconstruction 2017

NVIDIA, Redmond

Industrial Approaches for Real-time Ray Tracing 2017

UCSD Center for Visual Computing

Physically-Accurate Fur Reflectance: Modeling, Measurement and Rendering 2016

UCSD Center for Visual Computing

Pre-computed Real-time Rendering of Imperfect Surfaces, Autodesk 2015

Patent

Accurate Translucent Material Rendering under Spherical Gaussian Lights

Kun Xu and **Ling-Qi Yan**, Chinese patent protection, Document Number: KHP12115241.7