Chris Wyman
chris.wyman@acm.org

Abbreviated CV
October 2015

Summary: Experienced researcher and teacher focusing on computer graphics, especially real-time rendering, advanced lighting and material properties, efficient algorithms and data structures, and GPU computing and optimizations.

Education:

2004 PhD, Computer Science; University of Utah
1999 BS, Computer Science; BS, Mathematics; University of Minnesota

Employment:

Aug 2013 – Present	*Senior Research Scientist, NVIDIA*	*Redmond, WA*
May 2012 – Aug 2013	*Visiting Professor, NVIDIA*	*Salt Lake City, UT*
July 2004 – June 2014	*Associate Professor, University of Iowa*	*Iowa City, IA*
May 2011 – Dec 2011	*Contractor, SURVICE Engineering*	*Aberdeen, MD*
Aug 1999 – June 2004	*Research Assistant, University of Utah*	*Salt Lake City, UT*
Sept 1997 – June 1999	*Teaching Assistant, University of Minnesota*	*Minneapolis, MN*
Summer 1998, '99, '01	*Teaching Assistant, Summer Science Program*	*Ojai, CA*

Refereed Journal Papers: (13)

CloudLight: A System for Amortizing Indirect Lighting in Real-Time Rendering, *Journal of Computer Graphics Techniques 4(4), 1-27.*
Adaptive Depth Bias for Shadow Maps, *Journal of Computer Graphics Techniques 3(4), 146-162.*
Analytic Fits for the CIE XYZ Color Matching Functions, *Journal of Computer Graphics Techniques 2(2), 1-11.*
Non-Pinhole Approximations for Interactive Rendering, *IEEE Computer Graphics & Applications 31(6), 33-40.*
Interactive, Multiresolution Image-Space Rendering for Dynamic Area Lights, *Computer Graphics Forum 29(4), 1279-1288.*
The General Pinhole Camera: Effective and Efficient Non-Uniform Sampling, *IEEE Trans. Vis Comput. Graph. 16(5), 777-790.*
Interactive Indirect Illumination Using Multiresolution Adaptive Splatting, *IEEE Trans. Vis. Comput. Graph. 16(5), 724-741.*
Hierarchical Image-Space Radiosity for Interactive Global Illumination, *Computer Graphics Forum 28(4), 1141-1149.*
Adaptive Caustic Maps Using Deferred Shading, *Computer Graphics Forum 28(2), 309-318.*
Improving Image-Space Caustics via Variable-Sized Splatting, *Journal of Graphics Tools 13(1), 1-17.*
Interactive Display of Isosurfaces with Global Illumination, *IEEE Trans. Vis. Comput. Graph. 12(2), 186-196.*
The Halfway Vector Disk for BRDF Modeling, *ACM Transactions on Graphics 25(1), 1-18.*
An Approximate Image-Space Approach for Interactive Refraction, *ACM Transactions on Graphics 24(3), 1050-1053.*

Refereed Full-Length Conference Papers: (16)

Decoupled Coverage Anti-aliasing, *2015 Symp. on High Performance Graphics, 33-42.*
Frustum-Traced Raster Shadows: Revisiting Irregular Z-Buffers, *2015 Symp. on Interactive 3D Graphics and Games, 15-23.*
Adaptive Depth Bias for Shadow Maps, *2014 Symp. on Interactive 3D Graphics and Games, 97-102.*
Imperfect Voxelized Shadow Volumes, *2013 Symp. on High Performance Graphics, 45-52.*
Efficient Rendering of Anatomical Tree Structures Using Geometry Proxies, *2013 Int'l Symp on Biomedical Imaging, 206-209.*
Voxelized Shadow Volumes, *2011 Symp. on High Performance Graphics, 33-40.*
Interactive Visualization of Hospital Contact Network Data on Multi-Touch Displays, *2010 MexiHC, 15-22.*
Multiresolution Splatting for Indirect Illumination, *2009 Symp. on Interactive 3D Graphics and Games, 83-90.*
Interactive Volumetric Shadows in Single-Scattering Media, *2008 Symp. on Interactive Ray Tracing, 87-92.*
Hierarchical Caustic Maps, *2008 Symp. on Interactive 3D Graphics and Games, 163-171.*
The Soft Shadow Occlusion Camera, *2007 Pacific Graphics, 189-198.*
Interactive Refractions with Total Internal Reflection, *2007 Graphics Interface, 185-190.*
Interactive Image-Space Techniques for Approximating Caustics, *2006 Symp. on Interactive 3D Graphics and Games, 153-160.*
Interactive Image-Space Refraction of Nearby Geometry, *2005 GRAPHITE, 205-211.*
Interactive Caustics Using Local Precomputed Irradiance, *2004 Pacific Graphics, 143-151.*
Penumbra Maps: Approximate Soft Shadows in Real Time, *2003 Eurographics Symposium on Rendering, 202-207.*

Book Chapters: (3)

Fast, Stencil-Based Multiresolution Splatting for Indirect Illumination, *in GPU Pro, AK Peters, 199-214.*
A Hybrid Method for Interactive Shadows in Homogeneous Media, *in Shader X7, Charles River Media, 331-344.*
Interactive Refractions and Caustics Using Image-Space Techniques, *in Shader X5, Charles River Media, 359-371.*

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US Patents and (Publicly Available) Patent Applications: (1)

System and method for computing gathers using a single-instruction multiple-thread processor. US 20150221123 A1

Grants: As faculty at Univ. of Iowa, received $900,000+ contract/grant funding as sole PI and an add'l $500,000+ with others.

Research Dissemination: Presented over 12 talks internationally and 36 talks domestically. Research code available online.

Advised Graduate Students (at University of Iowa):

Greg Nichols (PhD 2010), Noah Abrahamson (MS 2008), Zeng Dai (MS 2014), Scott Davis (MS 2007), Hang Dou (MS 2013), Ethan Kerzner (MS 2013), Qi Mo (MS 2007), Rajeev Penmatsa (MS 2012), Yajie Yan.

Supervised Interns (at NVIDIA):

Yuxiang Wang (2014), Ian Mallett (2015)

Supervised Undergraduate Researchers (at University of Iowa):

Ethan Kerzner, Maranda Franke, Bruce Davis.

Major Conference Organization:

ACM SIGGRAPH

2013: General Submissions & Unified Jury Chair; **2012:** Late Breaking Submissions & Jury Chair;
2011: Research Section & Posters Chair

ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games

2010 & 2016: Conference Co-Chair; **2011:** Papers Co-Chair; **2009 & 2015:** Posters Chair

Editorial Boards:

Journal of Computer Graphics Techniques (2012 – present)
Eurographics Computer Graphics Forum (2011 – 2014)
Journal of Graphics Tools (2008 – 2012)

International Program Committees:

ACM SIGGRAPH General Submissions Jury 2010-'13,'15; ACM SIGGRAPH Late Breaking Jury 2010-'13,'15; ACM SIGGRAPH Posters Committee 2006; ACM Symposium on Interactive 3D Graphics and Games 2006, '08-09, '12-'15; Eurographics 2006, '08-'09; Eurographics Short Papers 2009; Eurographics Symposium on Rendering 2009-'11,'15; Graphics Interface 2009-'10; High Performance Graphics 2012; International Symposium on Visual Computing 2009-'10; Pacific Graphics 2006-'08, '11, '13-'15; Vision, Modeling and Visualization 2004-'06.

Grant Reviews: National Science Foundation, US Army Research Office, Nebraska Research Institute

Book Reviews: Addison-Wesley, CRC Press, Elsevier, Morgan & Claypool, Prentice Hall

Paper Reviewer:

ACM Transactions on Graphics (ToG), Computer Graphics Forum (CGF), IEEE Transactions on Visualization and Computer Graphics (TVCG), Journal of Computer Graphics Techniques (JCGT), Journal of Graphics Tools (JGT), Journal of Zhejiang University Science, The Visual Computer, Computers & Graphics (C&G), Symposium on High Performance Graphics (HPG), ACM SIGGRAPH, ACM SIGGRAPH Asia, Symposium on Interactive 3D Graphics and Games (I3D), Symposium on Principles and Practice of Parallel Programming (PPoPP), Symposium on Virtual Reality Software and Technology (VRST), Eurographics (EG), Eurographics Symposium on Rendering (EGSR), Graphics Interface (GI), IEEE EIT, IEEE Visualization, International Symposium on Visual Computing (ISVC), Pacific Graphics (PG), Vision Modeling and Visualization (VMV).

Honors:

Best papers: I3D 2015 (1st), IEEE CG&A 2011 (2nd), HPG 2011, HPG 2015 (3rd), I3D 2009 (top 4); *Best Presentation*: I3D 2015 (1st); *Member:* 2009 DARPA CSSG; *Educational Support:* Univ. of Utah Wayne Brown Fellowship

Miscellaneous: *Admissions Committee*, Summer Science Program 2010-'15 (http://www.summerscience.org)