

Andrew Glassner

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Fields of Interest

Computer Graphics: AR, interaction, rendering, modeling, signal processing, texturing, shading
Deep Learning: Decision justification, popularization, ethics, applications, teaching
Interaction Design: Creating and developing interactive experiences for education and entertainment
Interactive Storytelling: Participatory fiction, multiplayer games
Fiction: Novels, screenplays

Education

Ph.D., Computer Science, University of North Carolina at Chapel Hill, Chapel Hill, NC
M.S., Computer Science, University of North Carolina at Chapel Hill, Chapel Hill, NC
B.S., Computer Engineering, Case Western Reserve University, Cleveland, OH

Employment

Visiting Researcher, Weta Digital, Wellington, New Zealand

December 2018-March 2019

Worked with multiple teams involved in the research and production of world-class special effects for feature films, finding ways to apply deep learning to improve their processes and results.

Gave talks on deep learning.

Chief Science Officer / Creative Director, The Imaginary Institute, LLC, Seattle WA

February 2013 – Present

Wrote book on machine learning and deep learning for scientists, programmers, and engineers. Covers practical use of tools and techniques without math or elaborate programming.

Consulting and independent research in deep learning and computer graphics

Designed, wrote, recorded, edited, and released online course in 2D computer graphics

240 videos totaling 35 hours, plus programs and other materials. www.imaginary-institute.com

Designed, wrote, and released the AU Library for 2D and 3D computer-aided animation

Wrote technical notes on geometry and computer graphics

Collaborated on projects ranging from creative uses of metameric failure to 3D computer graphics

Consulted on a wide variety of computer graphics projects

Presented online and live classes in computer graphics to diverse audiences

Visiting Expert, Tableau Software, Seattle WA

November 2014 - January 2015

Invented and prototyped new technique for learning data analysis

Novelist, Screenwriter-Director, Consultant, Coyote Wind, LLC, Seattle WA

May 2000 – Present

Wrote 3 novels

Consulted in computer graphics

Researcher, Microsoft Research, Microsoft Corporation, Redmond, WA

July 1997 – May 2000

Research in 3D computer graphics and new media

Managed in-house artist

Writer-Director, The Microsoft Network, Redmond, WA

October 1996 - July 1997

Created and developed *Dead Air*, an interactive web-based mystery show for The Microsoft Network.

Wrote and directed pilot episode.

Researcher, Microsoft Research, Microsoft Corporation, Redmond, WA

December 1994 - October 1996

Research in 3D computer graphics and media theory

Wrote and directed several animated and live shorts, directing teams of up to 60 people

Member of the Research Staff, Xerox PARC, Xerox Corporation, Palo Alto, CA

September 1988 - September 1994

Research in computer graphics

Visiting Scientist, Delft University of Technology, Delft, The Netherlands

May 1987 - December 1987

Organized and taught advanced computer graphics course. Research in multidimensional ray tracing.

Research Assistant, University of North Carolina at Chapel Hill, Chapel Hill, NC

September 1984 - May 1988

Research in computer graphics, assisted Dr. Frederick P. Brooks

Summer Intern, Xerox Palo Alto Research Center (PARC), Palo Alto, CA

Summer 1986

Investigated the structure and shape of leaves and built a leaf modeling system

Consultant, Bell Communications Research, Piscataway, NJ

December 1983

Designed and implemented a high-speed 2D rendering library for the *Blit* graphics terminal**Summer Engineer**, Bell Communications Research, Piscataway, NJ

Summer 1984

Created and programmed graphics utilities for the *Blit* graphics terminal**Consultant**, IBM T.J. Watson Research Laboratory, Yorktown Heights, NY

December 1983

Consulted for Benoit Mandelbrot on the simulation of physical processing with fractal models

Summer Engineer, IBM T.J. Watson Research Laboratory, Yorktown Heights, NY

Summer 1983

Designed and implemented a graphics library for the *Yoda* graphics board**Software Engineer**

New York Institute of Technology (NYIT) Computer Graphics Laboratory

New York Institute of Technology (NYIT) Digital Sound Laboratory

Old Westbury, NY

September 1980 - August 1981

Designed and implemented one of the first interactive digital sound editing systems, a variety of sound synthesis algorithms, and a real-time image processing library. Modeled and animated 3D polygonal and quadric objects.

Books (Non-Fiction)

“Deep Learning: From Basics to Practice, Volume 1”, Imaginary Institute, Seattle, 2018

“Deep Learning: From Basics to Practice, Volume 2”, Imaginary Institute, Seattle, 2018

Both books, Chinese translation, Posts & Telecom Press, Beijing (in production)

Both books, Russian translation, DMK Press, Moscow (in production)

“Processing for Visual Artists,” AK Peters, Natick, 2010

- “Morphs, Mallards & Montages: Computer-aided Imagination”, AK Peters, Natick, 2004
- “Interactive Storytelling: Techniques for 21st Century Fiction”, AK Peters, Natick, 2004
- “Andrew Glassner’s Other Notebook: Further Recreations in Computer Graphics”, AK Peters, Natick, 2002
- “Andrew Glassner’s Notebook: Recreational Computer Graphics”, Morgan-Kaufmann Publishers, San Francisco, 1999
- “Principles of Digital Image Synthesis”, (two-volume textbook), Morgan-Kaufmann Publishers, San Francisco, 1995
- “Graphics Gems” Series Creator and Series Editor, volumes I through V, Academic Press, Cambridge, 1990-1995
- “Graphics Gems I”, Editor and Multiple Contributor, Academic Press, Cambridge, 1990
Japanese translation by Harcourt Brace Jovanovich, Japan.
Chinese translation by The National Institute for Compilation & Translation, China.
- “3D Computer Graphics: A Handbook for Artists and Designers”, Design Press, New York, 1989
Japanese translation 1990 by ASCII Press, Japan
- “An Introduction to Ray Tracing”, Editor and Contributor, Academic Press, London, 1989
- “Computer Graphics User's Guide”, Howard W. Sams & Co., Indianapolis, 1984
Japanese translation 1987 by ASCII Press, Japan

Primary Technical Publications

- Glassner, A., “Globs: A Primitive Shape for Graceful Blends Between Circles”, *Journal of Computer Graphics Techniques*, 4(3), pp. 1-22, 2015
- Glassner, A., “Interpreting Alpha”, *Journal of Computer Graphics Techniques*, 4(2), pp. 30-44, 2015
- Glassner, A., “Reconciling Circular and Elliptical Arcs”, *Journal of Graphics Tools*, 15(2), 2011
- Glassner, A., “Interactive Storytelling: People, Stories, and Games,” *Virtual Storytelling*, Olivier Balet, Gerard Subsol, Patrice Torguet, Eds., Springer-Verlag, LNCS 2197, 2001, pp. 51-60
- Glassner, A., “A Shape Synthesizer,” *IEEE Computer Graphics & Applications*, May-June 1997, 17(3), pp. 40-51
- Glassner, A., Marimont, D., Fishkin, K., and Stone, M., “Device Directed Rendering”, *ACM Transactions on Graphics*, 14(1), January 1995, pp. 58-76
- Glassner, A., “Dynamic Stratification”, *Proc. 4th Eurographics Workshop on Rendering*, Michael Cohen, Claude Puech and Francois Sillion, ed., Paris, June 1993, pp. 5-14
- Glassner, A., “A Dataflow Architecture for Shape Synthesis” *Graphicon '92*, Keldysh Institute of Applied Mathematics, Moscow, Russia. September 1992
- Glassner, A., “A Tutorial on Geometric Replacements”, *IEEE Computer Graphics & Applications*, 12(1), January 1992
- Glassner, A., “Growing Complex Shapes From Simple Forms (extended abstract)”, *Proceedings Eurographics '91*, September 1991
- Glassner, A., “Ray Tracing for Image Synthesis”, *Academic Press Encyclopedia of Physical Science and Technology*, 1991 Yearbook, Academic Press, New York, pp. 485-492, December 1990
- Glassner, A. “Geometric Substitutions”, *Proc. Ausgraph '90*, September 1990
- Glassner, A., “A 2D View Controller”, *ACM Transactions on Graphics*, 9(1), January 1990
- Glassner, A., “How to Derive a Spectrum From an RGB Triplet”, *IEEE Computer Graphics & Applications*, 9(4), July 1989
- Glassner, A., “Spacetime Ray Tracing for Animation”, *IEEE Computer Graphics & Applications*, 8(2), March 1988
- Glassner, A., “Supporting Animation in Rendering Systems”, *Proceedings CHI+GI '87 Workshop on Rendering Algorithms and Systems*, Canadian Information Processing Society, Toronto, April 1987
- Glassner, A., “Adaptive Precision in Texture Mapping”, *Computer Graphics*, 20(4), Siggraph '86, 1986
- Glassner, A., and Fuchs, H., “Hardware Enhancements for Raster Graphics”, *Proceedings NATO Advanced Study Institute on Fundamental Algorithms for Computer Graphics*, Fall 1985
- Glassner, A., “Space Subdivision for Fast Ray Tracing”, *IEEE Computer Graphics & Applications*, 4(10), October 1984 (reprinted in *Computer Graphics: Image Synthesis*, K. Joy, C. Grant, N. Max, L. Hatfield, Ed., IEEE Computer Society, 1988)
- Glassner, A., “Musicbox in C: An Interactive, Graphics, Digital Sound Editor”, *Proceedings of the 1980 International Computer Music Conference*, Fall 1980
- Glassner, A., and Kowalski, M., (January 1981), “The NYIT Digital Sound Editor”, *The Computer Music Journal*, 6(1)

Invited Presentations

- “The Best of Algorithms, The Worst of Algorithms,” Keynote presentation, Visual Computing Trends, Vienna Austria, January 2019
- “Our Disrupted Future: The Human Side of AI”, Plenary Keynote, Siggraph 2018 Business Symposium
- “Freezing Time: 3D Sculptures from 2D Animations,” invited presentation with Eric Haines, Siggraph 2015
- “Teaching Computer Graphics Online,” invited presentation, Siggraph 2014
- “Introduction to Computer Graphics,” invited course, Siggraph 2013
- “Modeling, Rendering, and Animation”, invited course, Siggraph 2008
- “Storytelling for Visual Analytics”, Invited Keynote, IEEE Symposium on Visual Analytics Science and Technology (IEEE VAST) 2009, New Jersey, October 2009
- “Stories and Graphics”, Human Interface Technology Lab, Canterbury, New Zealand, January 2007
- “Recreational Computer Graphics”, Adobe Systems, September 2006
- “Creating First-Person Interactive Narratives”, Research Colloquium, SFU School of Interactive Arts and Technology, September 2006
- “Computer Graphics and Storytelling”, Keynote Talk, Graphite 2005, New Zealand, December 2005
- “Interactive Storytelling,” Keynote Talk, International Digital Media and Arts Conference, Florida, March 2005
- “Stories, Games, and People”, Invited Talk, Cartoon Master, La Corona, Spain, April 2004
- “Participatory Narrative”, University of Washington Animation Lecture Series, January 2002
- “Do You See What I See?” Conference Keynote, IEEE Visualization 2001, San Diego, CA, October 2001
- “Online Storytelling: People, Stories, and Games”, Keynote Talk, International Conference on Virtual Storytelling, Avignon, France, September 2001
- “Storytelling for a Wired World”, Plenary Talk, AT&T Visualization Days, AT&T Shannon Laboratory, New Jersey, June 2001
- “Graphics, Stories, and Games”, 2001 Symposium on Interactive 3D Graphics, North Carolina, March 2001
- “Free Will, Structure, and Narrative: Designing Large Scale Storied Environments for Animation and Participation”, University of Washington Animation Production Series, Seattle, WA, January 2001
- “Digital Storytelling for A Wired World”, Simon Fraser University Distinguished Lecture Series, Burnaby, British Columbia, November 2000
- “Stories and Computers”, Microsoft Research Lecture Series, Beijing, China, April 2000
- “Fiction: Audiences and Computers”, Conference keynote, Eurographics UK, Swansea UK, March 2000
- “Stories and Structures”, Conference keynote, Eurographics 99, Milan, Italy, September 1999
- “Active Storytelling”, Conference keynote, CGI 99, Canmore, Alberta, June 1999
- “How to Render the World”, Programmer’s Keynote, Game Developer’s Conference, March 1999
- “Is There Hope for New Media?”, CGIX 98, Amsterdam, February 1998
- “Computer Graphics and Cultural Change”, Graphics Interface '97, Kelowna, BC, June 1997
- “Art and Animation”, Computer Graphics Grand Prix '97, Tokyo, Japan, March 1997
- “Networked Shape Synthesis”, Graphicon '92, Moscow, Russia, October 1992
- “The Grammar of Geometric Substitutions”, 1st International Conference on Scientific Visualization, Caracas, Venezuela, October 1991
- “Growing Complex Shapes From Simple Forms”, plenary talk, Eurographics '91, Austria, September 1991
- “The Theory and Practice of Ray Tracing”, full-day tutorial at Eurographics '91, Austria, September 1991
- “Ray Tracing”, full-day tutorial at Ausgraph '90, Melbourne, Australia, September 1990
- “Geometric Substitutions”, Ausgraph '90, Melbourne, Australia, September 1990
- “Ray Tracing: From Algorithms to Programs”, full-day course at Graphics Interface '89, 1989

Novels

- “Bait,” Amazon Kindle, 2015
- “Home Security,” Amazon Kindle, 2015
- “Freaks of Nurture,” Amazon Kindle, 2015

Films and Scripts

- “Welcome Home,” Writer-Director, science-fiction serial podcast, in pre-production, 2017
- “Making Memories,” Writer-Director, 3 minutes 16mm live action, Spring 2003
- “1000 Cranes,” Script treatment, Digital Domain, 2000
- “Flow Interface”, Writer-Director, 6 minutes, live action/stills, Microsoft 1998
- “Red Green Blues”, Director, Composer, and Lyricist, August 1998
- “Chicken Crossing”, Writer-Director and Producer, 3.5 minutes, animated 3D short
 - Siggraph '96 Electronic Theatre, Lucy Saenger Theatre, New Orleans, August 1996
 - Visual Fantasy 1997, Tokyo, February 1997
 - Computer Graphics Grand Prix '97, Tokyo, Japan, March 1997
 - British Broadcasting Corporation, January-December 1997
 - ACM 97 Screening Room, March 1997
 - Le Festival Du Dessin Anime et du Film D'animation, Brussels, April 1997
 - Fujita Vente Theatre, Japan, 1997-1998 program
 - 10th Computer Animation Film Festival, Geneva, August 1997
- “Space Dog”, Writer (unproduced animated short)
- “Shiela’s Diner”, Writer (unproduced animated short)
- “Shackleton”, Writer (unproduced feature)

Commercial Apps

- Designer and Programmer, “Maya Date” iPhone app, iTunes Store, 2009

Online Teaching

- “2D Animation and Interaction,” 8-week online video course offered through The Imaginary Institute, 2013
- “Introduction to Computer Graphics”, Siggraph University, 2013

Museum Exhibitions

- The Denver Museum of Nature & Science, Denver, CO, 2013. Mayan artwork and calendar glyphs.
- The Smithsonian National Museum of the American Indian, Interactive website, 2012. Mayan artwork and calendar glyphs.
- Tallinn City Museum, Estonia, 2010. “Time Pillars” exhibition. Mayan artwork and calendar glyphs.

Shows and Games

- Creator, “Dead Air”, Multiplayer murder-mystery game for The Microsoft Network, 1999
- Writer and Director, “Classical Trio”, the pilot episode for Dead Air, 1999
- Creator, “That’s Bull!”, Game for The Microsoft Network, 1999 (unproduced)
- Game Designer, “Demolition Construction Kit”, Software toy, Dreamworks, 1999 (unproduced)
- Creator, “Spaceship Mars”, Massively-multiplayer game, The Microsoft Network, 1998 (unproduced)
- Creator, “Island Paradise”, Multiplayer online game, The Microsoft Network, 1998 (unproduced)

Discography

- “Theme Songs From Shows That Never Were,” Composer-performer, 2015
- “Firefly”, CD, Composer-performer, 2000

Other Technical Publications

- Glassner, A., “Clipping a Concave Polygon”, in Graphics Gems V, A. Paeth, ed., Academic Press, Cambridge, 1995
- Glassner, A., “Building Vertex Normals From An Unstructured Polygon List”, in Graphics Gems IV, P. Heckbert, ed., Academic Press, Cambridge, 1994
- Glassner, A., “Darklights”, in Graphics Gems III, D. Kirk, ed., Academic Press, Cambridge, 1992
- Glassner, A., “Anti-Aliasing in Triangular Pixels”, in Graphics Gems III, D. Kirk, ed., Academic Press, Cambridge, 1992
- Glassner, A., “Adaptive Run-Length Encoding”, in Graphics Gems II, J. Arvo, ed., Academic Press, Cambridge, 1991

- Glassner, A., "Maintaining Winged-Edge Models", in Graphics Gems II, J. Arvo, ed., Academic Press, Cambridge, 1991
- Glassner, A., "A Simple Viewing Geometry" in Graphics Gems, A. Glassner, ed., Academic Press, Cambridge, 1990
- Glassner, A., "Useful 2D Geometry" in Graphics Gems, A. Glassner, ed., Academic Press, Cambridge, 1990 (also in Gems II, III, and IV)
- Glassner, A., "Useful 3D Geometry" in Graphics Gems, A. Glassner, ed., Academic Press, Cambridge, 1990 (also in Gems II, III, and IV)
- Glassner, A., "Frame Buffers and Color Maps" in Graphics Gems, A. Glassner, ed., Academic Press, Cambridge, 1990
- Glassner, A., "Normal Coding" in Graphics Gems, A. Glassner, ed., Academic Press, Cambridge, 1990
- Glassner, A., "Intepretation of Texture Map Indices" in Graphics Gems, A. Glassner, ed., Academic Press, Cambridge, 1990
- Glassner, A., "Multidimensional Sum Tables" in Graphics Gems, A. Glassner, ed., Academic Press, Cambridge, 1990
- Glassner, A., "An Overview of Ray Tracing" (book chapter in "An Introduction to Ray Tracing", A. Glassner, ed., Academic Press, London, 1989
- Glassner, A., "Surface Physics for Ray Tracing" (book chapter) in "An Introduction to Ray Tracing", A. Glassner, ed., Academic Press, London, 1989
- Glassner, A., "A Ray Tracing Glossary" (book chapter in "An Introduction to Ray Tracing", A. Glassner, ed., Academic Press, London, 1989

Popular Articles

- Glassner, A., "Ray Tracing in Computer Graphics", Computers in Science, September 1987, 1(2), p.18-25
- Glassner, A., "Ray Tracing for Realism", Byte Magazine, December 1990, 15(2), pp. 263-271

Journal Columns

Columns in "Andrew Glassner's Notebook" in IEEE Computer Graphics & Applications:

- "Speed Limit 55", vol. 26, no. 1, January 2005
- "Crop Circles, Part 2", vol. 25, no. 6, November 2004
- "Crop Circles, Part 1", vol. 25, no. 5, September 2004
- "Digital Cubism, Part 2", vol. 25, no. 4, July 2004
- "Digital Cubism, Part 1", vol. 25, no. 3, May 2004
- "Around and Around", vol. 25, no. 2, March 2004
- "About Face", vol. 25, no. 1, January 2004
- "Everyday Visualization", vol. 24, no. 6, November 2003
- "DMorph", vol. 23, no. 5, September 2003
- "Venn and Now", vol. 23, no. 4, July 2003
- "Image Search and Replace", vol. 23, no. 3, May 2003
- "Digital Weaving, Part 3", vol. 23, no. 2, March 2003
- "Digital Weaving, Part 2", vol. 23, no. 1, January 2003
- "Digital Weaving, Part 1", vol. 22, no. 6, November 2002
- "Getting the Picture," vol. 22, no. 5, September 2002
- "Duck!", vol. 22, no. 4, July 2002
- "Putting the Pieces Together", vol. 22, no. 3, May 2002
- "Interactive Pop-up Card Design, Part 2", vol. 22, no. 2, March 2002
- "Interactive Pop-up Card Design, Part 1", vol. 22, no. 1, January 2002
- "Quantum Computing, Part 3", vol. 21, no. 6, November 2001
- "Quantum Computing, Part 2", vol. 21, no. 5, September 2001
- "Quantum Computing, Part 1", vol. 21, no. 4, July 2001
- "A Change of Scene", vol. 21, no. 3, May 2001
- "Tricks of the Trade", vol. 21, no. 2, March 2001
- "Fill 'Er Up", vol. 21, no. 1, January 2001
- "Soap Bubbles, Part 2", vol. 20, no. 6, November 2000
- "Soap Bubbles, Part 1", vol. 20, no. 5, September 2000
- "Texturing with Symmetry", vol. 20, no. 4, July 2000
- "The Digital Ceraunoscope: Synthetic Thunder and Lightning, Part 2", vol. 20, no. 3, May 2000

- “The Digital Ceraunoscope: Synthetic Thunder and Lightning, Part 1”, vol. 20, no. 2, March 2000
- “Celtic Knotwork, Part 3”, vol. 20, no. 1, January 2000
- “Celtic Knotwork, Part 2”, vol. 19, no. 6, November 1999
- “Celtic Knotwork, Part 1”, vol. 19, no. 5, September 1999
- “O Say, Can You See?”, vol. 19, no. 4, July 1999
- “An Open and Shut Case”, vol. 19, no. 3, May 1999
- “String Crossings”, vol. 19, no. 2, March 1999
- “Fourier Polygons”, vol. 19, no. 1, January 1999
- “The Triangular Manuscripts”, vol. 18, no. 6, November 1998
- “Know When to Fold”, vol. 18, no. 5, September 1998
- “Aperiodic Tiles, Part 2”, vol. 18, no. 4, July 1998
- “Aperiodic Tiling”, vol. 18, no. 3, May 1998, pp. 83-90
- “Circular Reasoning”, vol. 18, no. 2, March 1998, pp. 104-108
- “Upon Reflection”, vol. 18, no. 1, January 1998, pp. 86-92
- “Inside Moire Patterns”, vol. 17, no. 6, November 1997, pp. 97-101
- “The Perils of Problematic Parameterization”, vol. 17, no. 5, September 1997, pp. 78-83
- “Net Results”, vol. 17, no. 4, July 1997, pp. 85-89
- “Signs of Significance”, vol. 17, no. 3, May 1997, pp. 79-82
- “Situation Normal”, vol. 17, no. 2, March 1997, pp. 83-87
- “Going the Distance”, vol. 17, no. 1, January 1997, pp. 78-84
- “Hey, Buddy, How Do I Get Into the Siggraph Electronic Theatre?”, co-authored with Jim Blinn, vol. 16, no. 6, November 1996, pp. 72-75
- “More Origami Solids”, vol. 16, no. 5, September 1996, pp. 85-91
- “Origami Platonic Solids”, vol. 16, no. 4, July 1996, pp. 85-91
- “Frieze Groups”, vol. 16, no. 3, May 1996, pp. 78-83
- “Computer Generated Solar Halos and Sun Dogs”, vol. 16, no. 2, Mar. 1996, pp. 77-81
- “Solar Halos and Sun Dogs”, vol. 16, no. 1, Jan. 1996, pp. 83-87

Other Professional Courses & Presentations

- “A Crash Course in Machine Learning,” Siggraph, 2018
<https://www.youtube.com/watch?v=r0Ogt-q956I>
- “Processing for Digital Artists,” Siggraph 2010
- “Introductory Computer Graphics”, Siggraph 2007
- “Recreational Computer Graphics”, Siggraph 2006, July 2006
- “An Introduction to Modeling”, Siggraph 1994-2005
- “An Introduction to Animation”, Siggraph 1994-2005
- “An Introduction to Rendering”, Siggraph 1994-2005
- “How to Give A Great Talk”, Siggraph 2001, July 2001
- “Fiction 2001: The Future of Storytelling”, Siggraph 2000, July 2000
- “Fiction 2000: Interactive Fiction”, Siggraph 1999, July 1999
- “Logo Design”, Art for Computer Graphicists, Siggraph 1998
- “The Myth of Online Community”, Computer-Human Interaction 1998, Los Angeles
- “The Dishonesty of Visual Culture”, Panel presentation, Siggraph 1996
- “Spectrum: An Architecture for Image Synthesis, Research, Education, and Practice”, in “Developing Large-Scale Graphics Software Toolkits”, Siggraph 1994
- “Ray Tracing Principles” in First International Conference on Scientific Visualization, Caracas, Venezuela, 1991
- “Spectrum: A Proposed Image Synthesis Architecture”, in “Frontiers in Rendering”, Siggraph 1991
- “Current Trends in Ray Tracing”, in “Advanced Topics in Ray Tracing”, Siggraph 1990
- “Implementation Notes for Ray Tracers”, in “Advanced Topics in Ray Tracing”, Siggraph 1990
- “Some Ideas for Future Work”, in “Advanced Topics in Ray Tracing”, Siggraph 1990
- “An Overview of Ray Tracing”, in “Introduction to Ray Tracing”, Siggraph 1987-89
- “Surface Physics for Ray Tracing”, in “Introduction to Ray Tracing” Siggraph 1987-89
- “A Ray Tracing Glossary”, in “Introduction to Ray Tracing” Siggraph 1987-89

Professional Teaching

- “Social and Political Implications of Deep Learning,” Weta Digital, Wellington, NZ, March 2019
- “Architectures for Deep Learning,” Weta Digital, Wellington, NZ, February 2019
- “Deep Learning,” 8 lectures, Weta Digital, Wellington, NZ, December 2018-January 2019
- “Computer Graphics for Animation”, Walt Disney Feature Animation, Burbank, CA, May 2000
- “Modern Computer Graphics”, Disney Feature Animation, Burbank, CA, June 1999
- “Art for Computer Graphicists”, Course Organizer, Chair, and Speaker, Siggraph '98
- “Introduction to Computer Graphics”, Speaker, Siggraph 1995 through 2002
- “Fundamentals and Overview of Computer Graphics”, Speaker, Siggraph '93, '94
- “Developing Large-Scale Graphics Software Toolkits”, Speaker, Siggraph '93
- “Frontiers in Rendering”, Course Organizer, Chair, and Speaker, Siggraph '92.
- “Advanced Topics in Ray Tracing”, Course Organizer, Chair, and Speaker, Siggraph '91.
- “State of the Art in Ray Tracing”, Eurographics '91
- “Ray Tracing Fundamentals”, Ausgraph '90, Melbourne, Australia
- “Introduction to Ray Tracing”, Course Organizer, Chair, and Speaker, Siggraph '89.
- “Theory and Practice of Ray Tracing”, Graphics Interface '89.
- “Introduction to Ray Tracing”, Course Organizer, Chair, and Speaker, Siggraph '88.
- “Introduction to Ray Tracing”, Course Organizer, Chair, and Speaker, Siggraph '87.

Colloquia and Workshops

- “Cool Topics in Computer Graphics,” Fakultät für Informatik, Universität Wien, Vienna, January 2019
- “Computer Graphics Applications, Technische Universität Wien, Vienna, January 2019
- “The Writing of “Deep Learning: From Basics to Practice,” Facebook, March 2018
- “Storytelling for Analytics”, Pacific Northwest National Laboratory, Richland, WA, August 2009
- “3D and Narrative”, University of Otago, New Zealand, January 2007
- “Interactive Storytelling”, Writer’s Guild of Canada, Toronto, November 2002
- “Participatory Storytelling”, The Institute for Simulation and Training, University of Central Florida, April 2002
- “Interactive Storytelling: People, Stories, and Games”, Florida State University, April 2002
- “Stories, Teaching, and the Future”, ThinkQuest Imagine the Future National Lecture Series, February 2002
- “The Future of Narrative”, University of Washington Animation Lecture Series, January 2002
- “Games, Stories, Computers, and People”, Naval Postgraduate School, April 2001
- “Modern Story Structure”, Electronic Arts, March 2001
- “Story Structure and Interaction”, UC Berkeley, March 2001
- “Stories and Computers”, Stanford University, March 2001
- “Short Story Structure”, University of Washington, February 2001
- “Joe’s Garage: An Interactive Digital Storytelling Workshop”, University of Central Florida, January 2001
- “Digital Storytelling”, Electronic Arts Canada, December 2000
- “Story Structure”, Electronic Arts, December 2000
- “Participative Storytelling” Digital Domain, Los Angeles, CA, October 2000
- “Participatory Stories” Sony Pictures Imageworks, Los Angeles, CA, September 2000
- “Active Storytelling” Detroit New Media Association, Ann Arbor, MI, June 1999
- “Active Storytelling” Interactive Multimedia Arts & Technologies, Toronto, ON, June 1999
- “The Future of Media” University of Washington, Seattle, WA, November 1997
- “Producing A Short Film: The Making of Chicken Crossing” Seattle Siggraph, Redmond, WA July, 1996
- “New Ideas in Modeling” Pratt Institute of Art and Design, Brooklyn, NY November, 1993
- “Device-Directed Rendering” Delft University of Technology, Delft, The Netherlands. June, 1993
- “Color Gamut Projection for Synthetic Images” UC Santa Cruz, Santa Cruz, CA. March, 1993
- “Device-Directed Rendering” Indiana University, Bloomington, IN. March, 1993
- “Rendering Within Constraints” Stanford University Graphics Lunch, Stanford, CA. March, 1993
- “Two Cool New Techniques for 3D Modeling”, Bay Area Siggraph, San Francisco, CA. April 1992
- “Geometric Substitutions and Shape Synthesis for 3D Modeling”, Fry's Lecture Series, Palo Alto, CA. November, 1992
- “Dancing Raisins in Your Refrigerator: Computer Graphics and Ubiquitous Computing” IBM T.J. Watson Research Center, Yorktown Heights, NY. June 1991

- “Growing Complex Shapes from Simple Forms” Sun Microsystems Graphics Forum, Mountain View, CA. November 1991
- “Modern Rendering Techniques”, Mitsubishi Corp, Sunnyvale, CA. 1992
- “Shape Synthesis”, Apple Computer, Sunnyvale, CA. April 1991
- “A Survey of Modern Image Synthesis”, Santa Clara University, Santa Clara, CA. November 1992
- “Survival Unix”, 4-part course, Palo Alto, CA. May 1990

Technical Notes

- Glassner, A., “Wrap: A Practical Replacement for Modulo,” Imaginary Institute Tech Note #12, July 2015
- Glassner, A., “Globs”, Imaginary Institute Tech Note #11, February 2015
- Glassner, A., “Interpreting Alpha”, Imaginary Institute Tech Note #10, November 2014
- Glassner, A., “AU Library Quick Reference”, Imaginary Institute Tech Note #9, October 2014
- Glassner, A., “Equal Spacing Along Curves”, Imaginary Institute Tech Note #8, October 2014
- Glassner, A., “Fields and Cameras”, Imaginary Institute Tech Note #7, October 2014
- Glassner, A., “Measuring Distances”, Imaginary Institute Tech Note #6, October 2014
- Glassner, A., “Waves”, Imaginary Institute Tech Note #5, October 2014
- Glassner, A., “Blending and Easing”, Imaginary Institute Tech Note #4, October 2014
- Glassner, A., “The AU Library”, Imaginary Institute Tech Note #3, October 2014
- Glassner, A., “Trig for Computer Graphics”, Imaginary Institute Tech Note #2, May 2013
- Glassner, A., “Solving Geometry Problems”, Imaginary Institute Tech Note #1, May 2013
- Glassner, A., “Andrew’s Quick Guide to Python”, Coyote Wind Studios, 2008
- Glassner, A., “Cubism and Cameras: Free-form Optics for Computer Graphics”, Technical Report MSR-TR-2000-05, Microsoft Research, Redmond, WA, January 2000
- Glassner, A., “Interactive Pop-Up Card Design”, Technical Report MSR-TR-98-03, Microsoft Research, Redmond, WA, January 1988
- Glassner, A., “Efficient Ray Tracing in Subdivided Space”, The Ray Tracing News, 2(1), pp. 11-12, February 1988
- Glassner, A., “Efficient Boolean Evaluation of CSG Models for Ray Tracing”, The Ray Tracing News, 1(1), pp. 3-7, September 1987
- Glassner, A., “The RSRT Template for Pose Interpolation”, Technical Memo #87-4, Faculty of Mathematics and Informatics, Technical University of Delft, Delft. December 1987
- Glassner, A., and Post, F., “Two Derivations of the Angular Interpolation Formula”, Technical Memo #87-3, Faculty of Mathematics and Informatics, Technical University of Delft, Delft, The Netherlands. December 1987
- Glassner, A., “How to Derive a Spectrum From an RGB Triple”, Technical Memo #87-2, Faculty of Mathematics and Informatics, Technical University of Delft, Delft, The Netherlands. October 1987
- Glassner, A., and Post, F., “On the Transformation of Surface Normals”, Technical Memo #87-1, Faculty of Mathematics and Informatics, Technical University of Delft, Delft, October 1987
- Glassner, A., “idb: An Ikonas Symbolic Debugger”, University of North Carolina Chapel Hill, NC, 1985
- Glassner, A., “libgik: An Ikonas Library”, University of North Carolina Chapel Hill, NC. July 1985

Journal Activities

- Member, Advisory Board, Journal of Computer Graphics Techniques, 2012 - present
- Member, Editorial Board, Journal of Graphics, Games and GPU Tools, September 2008 - 2012
- Co-Guest Editor (with Turner Whitted), Special Issue on Rendering, IEEE Computer Graphics & Applications, Volume 18, Number 2, March 1998
- Member, Editorial Board, Journal of Graphics Tools, July 1995 – September 2008
- Editor-in-Chief, ACM Transactions on Graphics, June 1995 - January 1997
- Founding Editor, Journal of Graphics Tools, July 1995
- Member, Editorial Board, IEEE Computer Graphics and Applications, Nov 1989 - 1995
- Letters and Short Notes Editor, IEEE Computer Graphics & Applications, January 1990 - January 1991
- Book Reviews Editor, IEEE Computer Graphics & Applications, January 1990 - January 1991
- Editor, The Ray Tracing News, September 1987 - May 1989

Major Conference Activities

Member, International Program Committee, International Conference in Central Europe on Computer Graphics, Visualization, and Computer Vision, Plzen, Czech Republic, 2015

Member, Computer Animation Festival: Real-Time Rendering Program Jury, Siggraph 2008, 2009, 2010

Member, Board of Directors, Siggraph 2009

Member, Late-Breaking Contributions Jury, Siggraph 2007

Member, Unified Program Jury, Siggraph 2007

Member, International Program Committee, First International Conference on Computer Graphics Theory and Applications, Lisboa, Portugal, 2006

Member, Program Committee, International Conference on Entertainment Computing, 2004

Member, Emerging Technologies Jury, Siggraph 2004

Member, Program Committee, International Conference on Computer Graphics and Interactive Techniques in Australasia and South East Asia, 2003

Member, ETech Advisory Committee, Siggraph 2002

Member, Computer Animation Festival Committee, Siggraph 2001

Member, Emerging Technologies Jury, Siggraph 2001

Member, Papers Committee, Siggraph 2000

Member, Art Show Jury, Siggraph 2000

Member, Emerging Technologies Jury, Siggraph 2000

Member, Papers Committee, 1999 Eurographics Rendering Workshop

Member, Panels Jury, Siggraph '99

Member, Technical Sketches Committee, Siggraph '99

Member, Program Committee, International Conference on Visual Computing, Goa, India, 1999

Member, Papers Committee, 1998 Eurographics Rendering Workshop

Member, International Program Committee, 1998 Spring Conference on Computer Graphics

Member, Enhanced Realities Jury, Siggraph '98

Member, Technical Sketches Committee Jury, Siggraph '98

Member, Ongoing (Fine Art Show) Jury, Siggraph '97

Member, Electric Garden Jury, Siggraph '97

Member, Technical Sketches Committee Jury, Siggraph '97

Member, Papers Committee, Spring Computer Graphics Conference '97

Member, Papers Committee, Eurographics Rendering Workshop '97

Member, Electronic Theatre Jury, Siggraph '96

Member, Technical Sketches Committee, Siggraph '96

Member, Papers Committee, Graphics Interface '96

Member, Papers Committee, Spring Computer Graphics Conference '96

Member, Papers Committee, 1995 Eurographics Rendering Workshop

Session Chair, Texture Synthesis, Siggraph '95

Member, Papers Committee, Graphics Interface '95

Member, Papers Committee, Siggraph '95

Member, International Programme Committee, Eurographics '95

Chairman, Papers Committee, Siggraph '94

Chairman, Technical Sketches Committee, Siggraph '94

Member, International Programme Committee, Eurographics '94

Member, International Technical Committee, Compugraphics '93

Member, International Technical Committee, Graphicon '93, St. Petersburg, Russia

Session Chair, Techniques For Animation, Siggraph '93

Member, Papers Committee, Siggraph '93

Member, International Programme Committee, Eurographics '92

Member, International Programme Committee, Eurographics '91

Member, Gunther Enderle Awards Committee, Eurographics '91

Session Chair, Animation and Illustration Systems, Siggraph '91

Member, Papers Committee, Siggraph '91

Academic Teaching

Guest lecture on Structure for Short Stories and Films
University of Washington, Seattle, WA, Fall '97, '98, '99, '00, '01

- “Advanced Computer Graphics” (a one-semester class)
Faculty of Mathematics and Informatics, Delft University of Technology, Delft, The Netherlands.
Fall 1987. Class organizer and teacher.
- “Ray Tracing and Radiosity: Fundamental Algorithms of Photorealistic Image Synthesis”,
The Berkeley Series in Visual Computing, University of California Berkeley, Berkeley, CA.
April 1991. 3-day short course organizer and teacher. Co-instructor, Peter Shirley.
- “The Theory and Practice of Ray Tracing”,
The Berkeley Series in Visual Computing, University of California Berkeley, Berkeley, CA.
October 1989. 3-day short course organizer and teacher. Co-instructor, Jim Arvo.
- Guest lecture, Stanford University, Stanford, CA. February 1991
- Guest lectures and Teaching Assistant, University of North Carolina, Chapel Hill, NC. April 1988

Patents

- Glassner, A., “A Method for Constructing and Folding Pop-up Cards,” patent 6,311,142.
- Glassner, A., “Image Rendering System with Local, Adaptive Estimation of Incident Diffuse Energy”,
Patent 5,488,700.
- Glassner, A., D. Marimont and M. Stone, “Method of Rendering a Color Image for an Output Medium
From Symbolic Image Data”, Patent 5,384,901
- Glassner, A., D. Marimont and M. Stone, “Rendering a Color Image for an Output Medium from Symbolic
Image Data”, European Patent 93308229.9
- Glassner, A., “Methods for Converting Concave Polyhedra to Their Convex Hulls”, Patent 5,428,717
- Glassner, A., “Sequencing and Scheduling Moves for Converting Concave Polyhedra to Their Convex
Hulls”, Patent 5,317,681
- Glassner, A., “Object-local Sampling Histories for Efficient Path Tracing”, Patent 5,305,430

Open-Source Software Releases

- Luminescence: An Online Loom for Weaving Cloth
2015, Javascript
Loom simulator featuring a powerful weaving language for large patterns
<https://github.com/blueberrymusic/Luminescence>
- The AU Library: Animation and rendering library for Processing
2014, Java
Multi-purpose library for creating animations in Processing
(extensive documentation in Imaginary Institute Technical Notes listed above)
<https://github.com/blueberrymusic/AULib>
- Animation Loops
2015-present, Processing
Animations published at <https://www.tumblr.com/blog/theimaginaryinstitute>
- Spectrum: Open-architecture system for modern rendering system research
2008, standard C
An open framework for ray tracing, radiosity, and other research
Distributed via email and CD

GitHub Repos

- <https://github.com/blueberrymusic>
- <https://gist.github.com/blueberrymusic>

Cover Images

- “Bubbling”, Communications of the ACM, vol. 41, no. 10, October 1998
- “DDR Box”, ACM Transactions on Graphics, ACM, January 1995
- “Computing Reviews” (cover quote), vol. 23, no. 6, June 1993
- “Graphics Gems III”, Art Director, Academic Press, 1992
- “Graphics Gems II”, Art Director, Academic Press, 1991
- “Graphics Gems”, Art Director, Academic Press, 1990
- “Subdivided Icosahedra”, Arts & Letters, Bryan College, Fall 1988
- “Dino's Lunch”, IEEE Computer Graphics & Applications, 8(3), May 1988

“Celtic Study 1”, Computer Graphics, 21(2), April 1987
 “Sinc City”, IEEE Computer Graphics & Applications, 4(10), October 1984
 “Three Rings”, Computer Graphics User's Guide, 1984

Professional Affiliations

Voting Member, Academy of Television Arts and Sciences
 Writer-Director, Founder, Coyote Wind Studios LLC

Expert Witness Work

2017: McRO, Inc. dba Planet Blue vs. Bethesda Softworks, LLC
 Worked with defendant (law firm confidential). Patent analysis.
 2015-16: Diamond Grading Technologies LLC v. Gemological Institute of America Inc.
 Worked with Paul Hastings LLP for defendant. Patent analysis and declaration for
 petition for Patent Office *inter partes* review.
 2014-15: Zii Labs vs. Apple. Worked with Kirkland & Ellis for defendant.
 2013-14: DSS vs. Coupons, Inc. (confidential agreement dispute). Worked with
 Farella Braun + Martel LLP for defendant. Analysis, reports, and deposition.
 2011-12: S3 v Apple (ITC patent dispute). Worked with O'Melveny & Myers for defendant.
 Patent, product, and prior art analysis.
 2008-9: Patent-related confidential arbitration. Worked with Kirkland & Ellis for defendant.
 Reports, deposition, and testimony.
 2007-8: Bowoto v ChevronTexaco. Worked with Hadsell & Stormer for plaintiff.
 Evidence analysis, reports, and deposition.
 2001-2: Macromedia v Adobe (patent dispute). Worked with Fenwick & West for plaintiff.
 Reports and deposition.

Consultation Clients

(partial list due to confidentiality agreements)
 AT&T Shannon Labs
 Electronic Arts
 Electronic Arts Canada
 IBM
 Macromedia
 Maxis
 Microsoft Research
 Radical Entertainment
 Tableau Software
 The Walt Disney Studios

Cover and Logo Designs

“Deep Learning: From Basics to Practice,” Volume 1, 2018
 “Deep Learning: From Basics to Practice,” Volume 2, 2018
 “Home Security,” Book Cover, 2015
 “Freaks of Nurture,” Book Cover, 2015
 “Bait,” Book Cover, 2015
 The Imaginary Institute, Logo, Seattle, 2013
 Coyote Wind Studios LLC, Logo, Seattle, 2002
 AK Peters Publishers, Logo, Cambridge, 1993
 PAPAGENA Project (European Community Esprit III), Logo, 1993
 VIEW Project, Logo, Chapel Hill, 1987
 First Workshop on Interactive 3D Graphics, Logo, 1988