Curriculum Vitae

Craig Donner

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September 1997 - September 2006

Education _

cdonner@cs.columbia.edu

http://www.cs.columbia.edu/~cdonner

UNIVERSITY OF CALIFORNIA AT SAN DIEGO Ph.D. in Computer Science, 2006 **Research Area: Computer Graphics** Adviser: Henrik Wann Jensen M.S. in Computer Science, 2004 **Research Area: Computer Graphics** Adviser: Henrik Wann Jensen B.S. in Computer Engineering, 2001 (magna cum laude)

Research/Work Experience ____

COLUMBIA UNIVERSITY

October 2007 - Present **Postdoctoral Researcher, Department of Computer Science**

Research in computer graphics focused on advanced appearance modeling, measurement techniques, complex light transport, and global illumination.

UNIVERSITY OF CALIFORNIA, SAN DIEGO September 2006 - September 2007 Postdoctoral Researcher, Department of Computer Science and Engineering

Research in computer graphics focused on appearance modeling, complex light transport, and global illumination.

WETA DIGITAL LTD.

Consultant, Shaders and Rendering Group

Development and implementation of advanced shading techniques for materials such as skin and leaves.

UNIVERSITY OF CALIFORNIA, SAN DIEGO October 2002 - September 2006 Graduate Student Researcher, Department of Computer Science and Engineering

Assisted in the design and construction of the Graphics and Vision Lab. Performed research in the areas of interactive full global illumination rendering, appearance modeling, and light transport simulation. Administrator of Linux and Windows machines, including multi-node clusters.

CALIT²

Graduate Student Researcher, Center for Research in Computing and the Arts Implemented high-end content creation tools for the creation of a digital immersive environment.

SAN DIEGO SUPERCOMPUTER CENTER

Graduate Student Researcher, Visualization Lab

Assisted in the design and construction of a tiled display, developed tools for display super highresolution images and movies.

SHELDON BROWN, INC.

Lead Programmer

Designed and implemented an immersive 3D environment engine, and design tools for content production. Project is currently on display at the Ruben H. Fleet Science Center in San Diego's Balboa Park.

SAN DIEGO SUPERCOMPUTER CENTER

Undergraduate Student Researcher, Visualization Lab Developed drivers for 3D input devices, designed and implemented a parallel visualization tools.

KNOWLEDGE ADVENTURE/DAVIDSON & ASSOC.

Lead Programmer

Lead development of an educational software package for children.

June - August 1998

July 2001 - April 2002

June 1999 - July 2000

June - September 2003

October-November 2006

August 2002 - June 2003

Teaching Experience

UNIVERSITY OF CALIFORNIA, SAN DIEGO

CSE 168, *Rendering Algorithms*, Spring 2004: Teaching Assistant/Lecturer CSE 167, *Introduction to Computer Graphics*, Fall 2003: Teaching Assistant/Lecturer CSE 190B, *Advanced Topics in Computer Science*, Spring 2002: Teaching Assistant/Lecturer CSE 167, *Introduction to Computer Graphics*, Spring 2001: Teaching Assistant CSE 167, *Introduction to Computer Graphics*, Spring 2000: Teaching Assistant CSE 30, *Computer Architecture*, Fall 1998: Tutor/Teaching Assistant

Honors and Awards _____

- Best Paper of Conference Award, Graphics Hardware, 2003
- Monbusho Scholarship, 2000
- Texaco Fellowship, 1997-2001
- Regent's Scholarship 1997-2001
- PVPHS Scholarship 1997

Invited Talks _

- "Volume Rendering: Participating Media", CSE 168 Guest Lecture, May 24th, 2007.
- "Efficient Rendering of Scattering Materials", Columbia University, New York, May 8th, 2007
- "Realistic Rendering of Layered Scattering Materials", Kao Corp., Japan, December 25th, 2006.
- "Beyond the Dipole: Realistic Image Synthesis of Scattering Materials", Weta Digital Ltd., New Zealand, October 27th, 2006.
- "A Practical Shading Model for Human Skin", UCSD, San Diego, USA, May 5th, 2006.
- "Light Diffusion in Multi-Layered Translucent Materials", Universität Erlangen-Nürnberg, Erlangen, Germany, June 28th, 2005.

Press _

- "Subsurface scattering: BSSRDF model", CGMagic: Rendering, Noriko Kurachi, November 2007
- "Latest techniques for modeling the appearance of skin", CGWorld Vol. 99, November 2006
- "CNN Explorers," CNN, September 2006
- "Multilayered translucent materials", CGWorld Vol. 85, July 2005
- "Rendering human skin", Weekly Visual Communications Journal (Eizoshinbun), July 25th, 2005
- "Brightest stars of graphics offer up plenty of gee-whiz," eetimes.com, October 2005
- "Adaptive Refinement Promises Faster Rendering on Graphics Chips," physorg.com, October 2004
- "Next generation global illumination", CGWorld Vol. 61, September 2003

Professional Activities _

Reviewer: ACM SIGGRAPH, ACM Journal of Graphics Tools, ACM Transactions on Graphics, Computer Graphics Forum, Eurographics, Eurographics Symposium on Rendering, IEEE Transactions on Visualization and Computer Graphics, IEEE Computer Graphics and Applications, Journal of the Optical Society of America A, Optics Express, Optics Letters, Applied Optics. Technical Papers Committe Member: Eurographics Symposium on Rendering 2008

SIGGRAPH Papers _

- C. Donner, T. Weyrich, E. d'Eon, S. Rusinkiewicz, and R. Ramamoorthi. A layered, heterogeneous reflectance model for acquiring and rendering human skin. To appear in ACM Trans. Graphic. (Proceedings of SIGGRAPH Asia 2008), 2008
- S. G. Narasimhan, M. Gupta, C. Donner, R. Ramamoorthi, S. Nayar, and H. W. Jensen. Acquiring scattering properties of participating media by dilution. ACM Trans. Graphic. (Proceedings of SIGGRAPH 2006), 25:1003–1012, 2006
- T. Weyrich, W. Matusik, H. Pfister, B. Bickel, C. Donner, C. Tu, J. McAndless, J. Lee, A. Ngan, H. W. Jensen, and M. Gross. *Analysis of human faces using a measurement-based skin reflectance model. ACM Trans. Graphic.* (Proceedings of SIGGRAPH 2006), 25:1013–1024, 2006
- C. Donner and H. W. Jensen. *Light diffusion in multi-layered translucent materials. ACM Trans. Graphic.* (Proceedings of SIGGRAPH 2005), 24(3):1032–1039, 2005

Peer-Reviewed Conference Papers ____

- C. Donner and H. W. Jensen. *Rendering translucent materials using photon diffusion* In *Rendering Techniques*, 2007
- C. Donner and H. W. Jensen. A spectral BSSRDF for shading human skin. In Rendering Techniques, pages 409–417, 2006
- T. J. Purcell, C. Donner, M. Cammarano, H. W. Jensen, and P. Hanrahan. *Photon mapping on programmable graphics hardware*. In *Graphics Hardware*, pages 41–50, 2003 (Awarded best paper of conference)

Journal Articles _

- W. Jarosz, C. Donner, M. Zwicker, and H. W. Jensen. *Radiance Caching for Participating Media*. ACM Trans. Graphic., 27(1):1–11, 2008
- C. Donner and H. W. Jensen. *Rapid simulation of steady-state spatially-resolved reflectance and transmittance profiles of multi-layered turbid materials. J. Opt. Soc. Am. A*, 23(6):1382–1390, 2006
- N. Joshi, C. Donner, and H. W. Jensen. Noninvasive measurement of scattering anisotropy in turbid materials by nonnormal incident illumination. Opt. Lett., 31:936–938, 2006

Other Publications

- W. Jarosz, C. Donner, M. Zwicker, and H. W. Jensen. *Radiance Caching for Participating Media*. In ACM SIGGRAPH Sketches and Applications, 2007
- C. Donner. Towards Realistic Image Synthesis of Scattering Materials. Ph.D. Dissertation, University of California at San Diego, 2006
- C. Donner and H. W. Jensen. A spectral shading model for human skin. In ACM SIGGRAPH Sketches and Applications, 2006
- B. Bickel, T. Weyrich, W. Matusik, H. Pfister, C. Donner, C. Tu, J. McAndless, J. Lee, A. Ngan, H. W. Jensen, and M. Gross. *Processing and editing of faces using a measurement-based skin reflectance model. ACM SIGGRAPH Sketches and Applications*, 2006
- C. Donner. *Photon mapping methods on programmable graphics hardware.* Master's thesis, University of California at San Diego, 2004
- C. Donner and H. W. Jensen. Faster GPU computations using adaptive refinement. In ACM SIGGRAPH Sketches and Applications, 2004

References

Ravi Ramamoorthi

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