

Daniel Lischinski

Curriculum Vitae

Education

Ph.D. in Computer Science, August 1994, Cornell University (Advisor: Donald P. Greenberg)
M.Sc. *summa cum laude* in Computer Science, June 1989, Hebrew University of Jerusalem, Israel
B.Sc. *summa cum laude* in Computer Science, June 1987, Hebrew University of Jerusalem, Israel

Experience

Hebrew University. Full Professor, October 2009 – present
Hebrew University. Associate Professor, October 2005 – September 2009
Hebrew University. Senior lecturer, October 2000 – September 2005
Hebrew University. Lecturer, September 1996 – September 2000
University of Washington. NSF postdoctoral research associate, 1994–1996
Cornell University. Teaching assistant, 1989–1990; research assistant, 1990–94
Open University, Tel-Aviv, Israel. Lecturer, operating systems, 1988–89
Hebrew University. Undergraduate research assistant, 1987; teaching assistant, 1987–89
Military service, 1980–85

Honors and Awards

Golda Meir fellowship, 1996
Gutwirth scholarship, 1989
Graduate excellence scholarship, Hebrew University, 1987–89
Rector's award, Hebrew University, 1986 and 1987
Dean's list, Hebrew University, 1986 and 1987

Publications

Siggraph Papers

- Z. Farbman, R. Fattal, and D. Lischinski. Convolution pyramids. *Proc. SIGGRAPH Asia 2011*. In *ACM Transactions on Graphics*, 30(5), December 2011.
- J. Kopf and D. Lischinski. Depixelizing pixel art. *Proc. SIGGRAPH 2011*. In *ACM Transactions on Graphics*, 30(4), August 2011.
- Y. HaCohen, E. Shechtman, D. Goldman, and D. Lischinski. Non-rigid dense correspondence with applications for image enhancement. *Proc. SIGGRAPH 2011*. In *ACM Transactions on Graphics*, 30(4), August 2011.
- Z. Farbman and D. Lischinski. Tonal stabilization of video. *Proc. SIGGRAPH 2011*. In *ACM Transactions on Graphics*, 30(4), August 2011.
- Z. Farbman, R. Fattal, and D. Lischinski. Diffusion maps for edge-aware image editing. *Proc. SIGGRAPH Asia 2010*. In *ACM Transactions on Graphics*, 29(5), December 2010.
- A. Rosenberger, D. Cohen-Or, and D. Lischinski. Layered shape synthesis: automatic generation of control maps for non-stationary textures, *Proc. SIGGRAPH Asia 2009*. In *ACM Transactions on Graphics*, 28(5), December 2009.
- Z. Farbman, G. Hoffer, D. Cohen-Or, Y. Lipman, and D. Lischinski. Coordinates for instant image cloning. *Proc. SIGGRAPH 2009*. In *ACM Transactions on Graphics*, 28(3), August 2009.
- J. Kopf, B. Neubert, B. Chen, M. Cohen, D. Cohen-Or, O. Deussen, M. Uyttendaele, and D. Lischinski. Deep Photo: model-based photograph enhancement and viewing, *Proc. SIGGRAPH Asia 2008*. In *ACM Transactions on Graphics*, 27(5), December 2008.

- Zeev Farbman, Raanan Fattal, Dani Lischinski, and Rick Szeliski. Edge-preserving decompositions for multi-scale tone and detail manipulation. *Proc. SIGGRAPH 2008*. In *ACM Transactions on Graphics*, August 2008.
- Tommer Leyvand, Daniel Cohen-Or, Gideon Dror, and Dani Lischinski. Data-driven enhancement of facial attractiveness. *Proc. SIGGRAPH 2008*. In *ACM Transactions on Graphics*, August 2008.
- Johannes Kopf, Michael Cohen, Dani Lischinski, and Matt Uyttendaele. Joint bilateral upsampling. *Proc. SIGGRAPH 2007*. In *ACM Transactions on Graphics*, vol. 26, no. 3, July 2007.
- Johannes Kopf, Chi-Wing Fu, Daniel Cohen-Or, Oliver Deussen, Dani Lischinski, and Tien-Tsin Wong. Solid texture synthesis from 2D exemplars. *Proc. SIGGRAPH 2007*. In *ACM Transactions on Graphics*, vol. 26, no. 3, July 2007.
- Dani Lischinski, Zeev Farbman, Matt Uyttendaele, and Rick Szeliski. Interactive local manipulation of tonal values. *Proc. SIGGRAPH 2006*. In *ACM Transactions on Graphics*, vol. 25, no. 3, July 2006.
- Johannes Kopf, Daniel Cohen-Or, Oliver Deussen, and Dani Lischinski. Recursive Wang tiles for real-time blue noise. *Proc. SIGGRAPH 2006*. In *ACM Transactions on Graphics*, vol. 25, no. 3, July 2006.
- Raanan Fattal and Dani Lischinski. Target-driven smoke animation. *Proc. SIGGRAPH 2004*. In *ACM Transactions on Graphics*, 23(3), August 2004, pp. 441–448.
- Anat Levin, Dani Lischinski, and Yair Weiss. Colorization using optimization. *Proc. SIGGRAPH 2004*. In *ACM Transactions on Graphics*, 23(3), July 2004, pp. 689–694.
- Raanan Fattal, Dani Lischinski, and Michael Werman. Gradient domain high dynamic range compression. *Proc. SIGGRAPH 2002*. In *ACM Transactions on Graphics*, 21(3), July 2002, pp. 249–256.
- Frédéric Pighin, Jamie Hecker, Dani Lischinski, Richard Szeliski, and David H. Salesin. Synthesizing realistic facial expressions from photographs. *Proc. SIGGRAPH 98*. In *Computer Graphics Proceedings, Annual Conference Series*, July 1998, pp. 75–84.
- Jonathan Shade, Dani Lischinski, David H. Salesin, Tony DeRose, and John Snyder. Hierarchical image caching for accelerated walkthroughs of complex environments. *Proc. SIGGRAPH 96*. In *Computer Graphics Proceedings, Annual Conference Series*, 1996, pp. 75–82.
- Mike Salisbury, Corie Anderson, Dani Lischinski, and David H. Salesin. Scale-dependent reproduction of pen-and-ink illustrations. *Proc. SIGGRAPH 96*. In *Computer Graphics Proceedings, Annual Conference Series*, 1996, pp. 461–468.
- Dani Lischinski, Brian Smits, and Donald P. Greenberg. Bounds and error estimates for radiosity. *Proc. SIGGRAPH 94*. In *Computer Graphics Proceedings, Annual Conference Series*, 1994, pp. 67–74.
- Dani Lischinski, Filippo Tampieri, and Donald P. Greenberg. Combining hierarchical radiosity and discontinuity meshing. *Proc. SIGGRAPH 93*. In *Computer Graphics Proceedings, Annual Conference Series*, 1993, pp. 199–208.

Other Journal Papers

- E. Sivaks and D. Lischinski. On neighborhood matching for texture-by-numbers. *Computer Graphics Forum*, 30(1), 2011.
- J. Kopf, D. Lischinski, O. Deussen, D. Cohen-Or, and M. Cohen. Locally adapted projections to reduce panorama distortions. *Computer Graphics Forum*, 28(4), August 2009.

- Anat Levin, Alex Rav-Acha, and Dani Lischinski. Spectral Matting. *IEEE Transactions on PAMI*, October 2008.
- Yael Shor and Dani Lischinski. The Shadow Meets the Mask: Pyramid-Based Shadow Removal. *Computer Graphics Forum*, vol. 27, no. 2, April 2008.
- Anat Levin, Dani Lischinski, and Yair Weiss. A Closed Form Solution to Natural Image Matting. *IEEE Transactions on PAMI*, vol. 30, no. 2, Feb. 2008
- Alon Lerner, Yiorgos Chrysanthou, and Dani Lischinski. Crowds by Example. *Computer Graphics Forum*, Sept. 2007.
- Alex Rav-Acha, Yael Pritch, Dani Lischinski, and Shmuel Peleg. Dynamosaicing: Mosaicing of Dynamic Scenes. *Proc. IEEE Transactions on PAMI*, 2007.
- Raanan Fattal and Dani Lischinski. Pose controlled physically based animation. *Computer Graphics Forum*, 2007.
- Shmuel Moradoff and Dani Lischinski. Constrained synthesis of textural motion for articulated characters. *The Visual Computer*, 20(4), June 2004, pp. 253–265.
- Iddo Drori and Dani Lischinski. Fast multi-resolution image operations in the wavelet domain. *IEEE Transactions on Visualization and Computer Graphics*, 9(3), 2003, pp. 395–411.
- Shlomo Dubnov, Ziv Bar-Joseph, Ran El-Yaniv, Dani Lischinski, and Michael Werman. Synthesizing sound textures through wavelet tree learning. *IEEE Computer Graphics and Applications*, 22(4), 2002, pp. 38–48.
- Ram Shacked and Dani Lischinski. Automatic lighting design using a perceptual quality metric. *Computer Graphics Forum*, 20(3), Sep. 2001. (Best Paper Award, 3rd prize.)
- Eyal Teler and Dani Lischinski. Streaming of complex 3D scenes for remote walkthroughs. *Computer Graphics Forum*, 20(3), Sep. 2001.
- Ziv Bar-Joseph, Ran El-Yaniv, Dani Lischinski, and Michael Werman. Texture mixing and texture movie synthesis using statistical learning. *IEEE Transactions on Visualization and Computer Graphics*, 7(2), pp. 120–135.
- Shachar Fleishman, Daniel Cohen-Or, and Dani Lischinski. Automatic camera placement for image-based modeling. *Computer Graphics Forum*, 19(2), June 2000, pp. 101–110.
- Per Christensen, Dani Lischinski, Eric Stollnitz, and David H. Salesin. Clustering for glossy global illumination. *ACM Transaction on Graphics*, 16(1), 1997, pp. 3–33.
- Dani Lischinski, Filippo Tampieri, and Donald P. Greenberg. Discontinuity meshing for accurate radiosity. *IEEE Computer Graphics and Applications* 12(6), 1992, pp. 25–39.
- Dani Lischinski and Jakob Gonczarowski. Improved techniques for ray tracing parametric surfaces. *The Visual Computer: International Journal of Computer Graphics* 6(3), 1990, pp. 134–152.

Refereed Conferences

- S.-B. Kang, A. Kapoor, and D. Lischinski. Personalization of image enhancement. *Proc. IEEE CVPR 2010*. June 2010.
- M. Freiman, O. Cooper, D. Lischinski, and L. Joskowicz. Liver tumors segmentation from CTA images using voxels classification and affinity constraint propagation. *Proc. 24th Int. Conf. on Computer Assisted Radiology and Surgery (CARS'2010)*.
- Y. HaCohen, R. Fattal, and D. Lischinski. Image upsampling via texture hallucination. *Proc. ICCP 2010*. April 2010.
- O. Cooper, M. Freiman, L. Joskowicz, and D. Lischinski. Affinity-based constraint optimization for nearly-automatic vessel segmentation. *Proc. SPIE Symposium on Medical Imaging*,

February 2010.

- M. Freiman, L. Joskowicz, D. Lischinski, and J. Sosna. A feature-based transfer function for liver visualization. *Proc. 21th Int. Conf. on Computer Assisted Radiology and Surgery (CARS'2007)*. Elsevier, 2007.
- A. Levin, A. Rav-Acha, and D. Lischinski. Spectral Matting. *Proc. IEEE CVPR 2007*, June 2007.
- A. Levin, D. Lischinski, and Y. Weiss. A Closed Form Solution to Natural Image Matting. *Proc. IEEE CVPR 2006*, June 2006.
- Y. Schnitman, Y. Caspi, D. Cohen-Or, and D. Lischinski. Inducing semantic segmentation from an example. *Proc. ACCV 2006*, Jan. 2006.
- A. Rav-Acha, Y. Pritch, D. Lischinski, and S. Peleg. Dynamosaics: Video Mosaics with Non-Chronological Time. *Proc. IEEE CVPR 2005*, June 2005.
- R. Irony, D. Cohen-Or, and D. Lischinski. Colorization by example. *Rendering Techniques 2005 (Proc. Eurographics Symposium on Rendering)*, June 2005.
- O. Engolz, R. Goldenthal, D. Lischinski, and D. Cohen-Or. An Algebraic Multi-grid Approach for High-Pass Quantization. *The 5th Israel-Korea Bi-National Conference on Geometric Modeling and Computer Graphics*, Oct. 2004.
- S. Moradoff and D. Lischinski. Synthesis of textural motion with hard constraints. *The 4th Israel-Korea Bi-National Conference on Geometric Modeling and Computer Graphics*, Feb. 2003.
- O. Sorkine, D. Cohen-Or, R. Goldenthal, and D. Lischinski. Bounded-distortion parameterization and mesh partitioning. *Proc. IEEE Visualization 2002*, Sept. 2002.
- R. Fattal and D. Lischinski. Variational classification for visualization of 3D ultrasound data. *Proc. IEEE Visualization 2001*, Oct. 2001, pp. 403–410.
- T.-J. Park, S. Fleishman, D. Cohen-Or, and D. Lischinski. Compression of indoor video sequences using homography-based segmentation. *Proc. Pacific Graphics 2000*, Oct. 2000.
- I. Drori and D. Lischinski. Wavelet warping. *Rendering Techniques 2000*, June 2000, pp. 113–124.
- S. Fleishman, D. Cohen-Or, and D. Lischinski. Automatic camera placement for image-based modeling. *Proc. Pacific Graphics '99*, Oct. 1999, 12–20.
- D. Lischinski and A. Rappoport. Simulating reflections in image-based rendering of synthetic scenes. *Proc. Korea-Israel Bi-National Conference on Geometrical Modeling and Computer Graphics in the World Wide Web Era*, Sept. 1999, 53–64.
- Z. Bar-Joseph, S. Dubnov, R. El-Yaniv, D. Lischinski, and M. Werman. Granular synthesis of sound textures using statistical learning. *Proc. International Computer Music Conference '99*, Oct. 1999.
- D. Lischinski and A. Rappoport. Image-based rendering for non-diffuse synthetic scenes. *Rendering Techniques '99*, June 1998, pp. 301–314.
- Y. Chrysanthou, D. Cohen-Or, and D. Lischinski. Fast approximate quantitative visibility for complex scenes. *Proc. Computer Graphics International 98*.
- F. Pighin, D. Lischinski, and D. Salesin. Progressive previewing of ray-traced images using image-plane discontinuity meshing. *Rendering Techniques '97*, June 1997, pp. 115–126.
- B. Chamberlain, T. DeRose, D. Lischinski, D. Salesin, and J. Snyder. Fast rendering of complex environments using a spatial hierarchy. *Proc. Graphics Interface '96*, May 1996, pp. 132–141.
- D. Salesin, D. Lischinski, and T. DeRose. Reconstructing illumination functions with selected discontinuities. *Proc. Third Eurographics Workshop on Rendering*, 1992, pp. 99–112.
- F. Tampieri and D. Lischinski. The constant radiosity assumption syndrome. In *Photorealistic*

rendering in computer graphics, P. Brunet and F. W. Jansen, editors, Springer-Verlag, 1994.

Edited Books

D. Lischinski and G. W. Larson, editors, *Rendering Techniques '99*, Springer-Verlag, 1999.

Book Chapters

D. Lischinski. Incremental Delaunay triangulation. In *Graphics Gems IV*, P. Heckbert, editor, Academic Press, 1994.

D. Lischinski. Converting rectangular patches into Bézier triangles. In *Graphics Gems IV*, P. Heckbert, editor, Academic Press, 1994.

D. Lischinski. Converting Bézier triangles into rectangular patches. In *Graphics Gems III*, D. Kirk, editor, Academic Press, 1992.

Other publications

A. Rav-Acha, Y. Pritch, D. Lischinski, and S. Peleg. Evolving time fronts: Spatio-temporal video warping. Technical Report 2005-10, The Hebrew University of Jerusalem, April 2005.

D. Lischinski. Accurate and reliable algorithms for global illumination. Ph.D. Thesis, Department of Computer Science Technical Report TR 94-1448, Cornell University, 1994.

D. Lischinski. Combining hierarchical radiosity with discontinuity meshing. *SIGGRAPH '94 Radiosity course notes*, 1994.

D. Lischinski and F. Tampieri. Discontinuity meshing for radiosity. *SIGGRAPH '92 Radiosity course notes*, 1992.

D. Lischinski, F. Tampieri, and D. Greenberg. Improving sampling and reconstruction techniques for radiosity. Department of Computer Science Technical Report TR 91-1202, Cornell University, 1991.

Images in Books and Covers

Back cover image for *ACM Transactions on Graphics*, volume 26, number 3, July 2007.

Back cover image for *ACM Transactions on Graphics*, volume 21, number 3, July 2002.

Color plates 18.69–18.71 in *Principles of Digital Image Synthesis* by A. Glassner. Morgan Kaufmann, 1995.

Color plates 23–25 in *Radiosity and Global Illumination* by F. Sillion and C. Puech. Morgan Kaufmann, 1994.

Color plates 32–34 in *Radiosity and Realistic Image Synthesis* by M. Cohen and J. Wallace. Academic Press, 1993.

Title page image for *Computer Graphics*, Annual Conference Series, 1993.

Cover image for *The Visual Computer* 6(3), 1990.

Grants

The Israel Science Foundation: Interactive tools for artists and animators, 2006–2010.

The German-Israeli Foundation (GIF): Modeling, simulating, and visualizing complex, realistic landscapes and ecosystems, 2007–2009.

The Israel Science Foundation: Advanced techniques for automating photorealistic image synthesis, 2003–2006.

Israel Ministry of Science (strategic infrastructure grant): Virtual reality and applications, 2002–2005.

Israel Ministry of Science (strategic infrastructure grant): Visual scene teleportation, 2000–2003.
The Israel Science Foundation: Image-based modeling and rendering for accelerated 3D graphics, 1999–2003.
Israel Ministry of Science (strategic infrastructure grant): Interactive multimedia over broad-band communication channels, 1998–2001.
Magnet/Izmel grant: Fusion and real-time display of medical data from multiple modalities, 1998–2003.
Wolfson Family Charitable Trust (equipment purchase grant): Laboratory for virtual and augmented reality.
Intel Israel academic research grant: Accelerated 3D graphics via image-based rendering, 1997–1998.
The Israel Science Foundation (equipment purchase grant): Towards interactive high-fidelity complex virtual worlds, 1997–1998.
France–Israel binational research fund grant number 88091-96: High-fidelity virtual reality over high speed networks, 1996–1998.

Students

Zeev Farbman, Ph.D. in progress.
Yoav HaCohen, Ph.D. in progress.
Raanan Fattal, Ph.D. 2005.
Aran Reizman, M.Sc. in progress.
Elad Aharoni, M.Sc. in progress.
Yakov Shambik, M.Sc. in progress.
Liad Kaufman, M.Sc. in progress.
Yaron Inger, M.Sc. in progress.
Ohad Fried, M.Sc. in progress.
Ben Hazan, M.Sc. in progress.
Elyahu Syvaks, M.Sc. 2010.
Oded Sharon, M.Sc. 2010.
Ofir Cooper, M.Sc. 2009.
Sharon Peri, M.Sc. 2009.
Yael Shor, M.Sc. 2008.
Ofir Engolz, M.Sc. 2004.
Shmuel Moradoff, M.Sc. 2002.
Amichai Nitsan, M.Sc. 2002.
Eyal Teler, M.Sc. 2001.
Ram Shacked, M.Sc. 2001.
Iddo Drori, M.Sc. 2000.
Ziv Bar-Joseph, M.Sc. 1999.

Invited talks

Discontinuity meshing for radiosity: Siggraph '92 course on Radiosity.
Discontinuity meshing for accurate radiosity:
 Hebrew University, Department of Computer Science, January 1993.
Combining hierarchical radiosity with discontinuity meshing:
 Siggraph '94 course on Advanced Topics in Radiosity.
Clustering for Glossy Global Illumination:

Microsoft Research, February 1995.

Hierarchical image caching for accelerated walkthroughs of complex environments:
Ben Gurion University, Department of Computer Science, March 1996.
Hebrew University, Department of Computer Science, March 1996.
Technion, Department of Computer Science, March 1996.
Dagstuhl seminar on rendering, June 1996.
Israel Siggraph Chapter meeting, December 1996.

Accurate and reliable algorithms for radiosity:
IBM Haifa Research Center, March 1996.
Tel-Aviv University, Department of of Computer Science, March 1996.

Scale-dependent reproduction of pen-and-ink illustrations:
iMAGIS, Laboratoire GRAVIR/IMAG-INRIA, June 1997.

Accelerated 3D graphics via image-based rendering:
Intel Israel annual academic seminar, November 1997.

Image-based rendering for non-diffuse synthetic scenes:
Israel Siggraph Chapter meeting, July 1999.
Weizmann Institute, March 2000.

Streaming of complex 3D scenes for remote walkthroughs:
Dagstuhl seminar on interactive graphics and image synthesis, June 2000.

Texture mixing and texture movie synthesis using statistical learning:
Microsoft Research, July 2000.
Siggraph 2000 technical sketches program, July 2000.

New applications of the variational principle in computer graphics:
Technion, CGGC seminar, Department of Computer Science, February 2002.
Tel-Aviv University, Department of Electrical Engineering Systems, March 2002.

Target-Driven Smoke Animation: Hanyang University, Seoul, South Korea, October 2004.

Evolving time fronts: Spatio-temporal video warping: Trinity College, Dublin, Ireland, April 2005.

Interactive Image Manipulation via Image-Guided Optimization:
The Rank Prize Workshop, Lake District, July 2008.
Computational Photography symposium, Microsoft Research, July 2008.

Academic Activities

Program committee co-chair: Tenth Eurographics Workshop on Rendering.

Area coordinator (imaging and vision), Siggraph 2007.

Program committee member: Siggraph 2003–2004 and 2006–2007; Eurographics Workshop on Rendering 1997–2006; Eurographics 2000–2002 and 2005; Texture 2002.

Reviewed papers for: SIGGRAPH annual conferences 1990–2008; Eurographics conferences 1997–2008, Graphics Interface 1997 and 1999; 1999 Symposium on 3D Interactive Graphics; IEEE Visualization conference 1997, 2001, and 2003; *ACM Transactions on Graphics*, *IEEE Computer Graphics and Applications*, *IEEE Transactions on Visualization and Computer Graphics*, *IEEE Transactions on PAMI*, *Computers and Graphics*, *Computer Graphics Forum*, *International Journal of Computer Vision*, *Information Processing Letters*.

Member, ACM SIGGRAPH and Eurographics.

Chair, Central Israel Siggraph local chapter, 2000–2002.

Computer Science M.Sc. program advisor, 1997–2001, 2004–2006.

Chair, Computer Science studies, 2007 – present.