

Aner Ben-Artzi, Ph.D.

Contact

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Personal Synopsis

Born: August 28, 1979 (Israel)
Moved to US: March 24, 1985 (Los Angeles, CA)
Bachelor's Graduation: May 30, 2001 (Berkeley, CA)
Married: August 15, 2004 (Los Angeles, CA)
Ph.D. Defended: May 7, 2007 (New York, NY)
Daughter born: October 9, 2008 (Los Angeles, CA)

Education

Ph.D. in Computer Science (May 2007)

Columbia University, New York, NY
Thesis: Final-Placement Material Editing

M.S. in Computer Science (Feb 2004)

Topic: Interactive Photo-Realistic Rendering with Acquired Data
Columbia University, New York, NY

B.A. in Computer Science (May 2001)

University of California, Berkeley, CA
Emphasis: Databases

Professional Experience (post-graduate)

Sony Pictures Imageworks — Culver City, CA (June 2007-Present)
Software Engineer II – Research and Development

Research with a strong emphasis on practical and immediately useful implementation. Develop in-house tools to automate and assist generation of computer-graphics for animated and live-action feature films. Research and development of toolsets for computer assisted creation of 3D for live action pictures.

Publications

Ben-Artzi, Aner; Egan, Kevin; Durand, Frédo; Ramamoorthi, Ravi. **A Precomputed Polynomial Representation for Interactive BRDF Editing with Global Illumination**. ACM Transactions on Graphics, April 2008

Ben-Artzi, Aner; Overbeck, Ryan; Ramamoorthi, Ravi. **Real-Time BRDF Editing in Complex Lighting**. ACM Transactions on Graphics, July 2006 (SIGGRAPH 2006).

Overbeck, Ryan; Ben-Artzi, Aner; Grinspun, Eitan; Ramamoorthi, Ravi. **Exploiting Temporal Coherence for Incremental All-Frequency Relighting**. Eurographics Symposium on Rendering 2006.

Publications (continued)

Lawrence, Jason; Ben-Artzi, Aner; DeCoro, Chris; Matusik, Wojciech; Pfister, Hanspeter; Ramamoorthi, Ravi; Rusinkiewicz, Szymon. **Inverse Shade Trees for Non-Parametric Material Representation and Editing**. ACM Transactions on Graphics, July 2006 (SIGGRAPH 2006).

Ben-Artzi, Aner; Ramamoorthi, Ravi; Agarwala, Maneesh. **Efficient Shadows from Sampled Environment Maps**. Journal of Graphics Tools. 11, 1. 13-36, 2006.

Ben-Artzi, Aner. **Approximating the Reflection Integral as a Summation: Where did the delta go?** Tech Report CUCS-042-05, Columbia University, October 2005.

Ben-Artzi, Aner. **Interactive, Photorealistic Rendering with Acquired Data**. Candidacy Exam, Columbia University, June 2004.

Doctoral Thesis

Final-Placement Material Editing

High-Quality photorealistic and artistic editing of virtual materials in computer generated scenes. Based on precomputation and basis extraction methods, high-dimensional tensors store symbolic representations of a CG scene. User input guides interactive rendering of changing material properties.

Technical Skills

Computer Languages:	C/C++ (expert), Python, Java
Development Technologies:	OpenGL, Qt, PyQt, open source libraries, Autodesk Maya, shell scripts, make, svn
Operating Systems:	Windows, Linux, Mac(user-level)
Project environment experience:	Independent research, large active codebases, library development, application development

Talks and Presentations

Siggraph 2008 Paper Talk (TOG publications) A Precomputed Polynomial Representation for Interactive BRDF Editing with Global Illumination	Los Angeles, CA Aug 2008
UC Riverside Computer Graphics Colloquium Invited Talk Material Editing in Computer Graphics	Riverside, CA Feb 2007

Talks and Presentations (continued)

Tel-Aviv University Graphics Colloquium
Invited Talk
Tel-Aviv, Israel
Jan 2007

BRDF Editing vs. Relighting

UCSB Computer Science Colloquium
Invited Talk
Santa Barbara, CA
Nov 2006

BRDF Editing as Precomputation

Rcafe at Columbia University
Research Group Presentation
New York, NY
Sep 2006

BRDF Editing with Global Illumination

Siggraph 2006
Paper Talk
Boston, MA
Aug 2006

Real-Time BRDF Editing in Complex Lighting

Rcafe at Columbia University
Research Group Presentation
New York, NY
Mar 2005

Visibility Coherence in Environment Lighting

Siggraph 2004
Poster Presentation
Los Angeles, CA
Aug 2004

Efficient Shadows from Sampled Environment Maps

Teaching Experience

Computer Graphics

Columbia University course COMS 4160 (upper division / graduate)

Teaching Assistant for Ravi Ramamoorthi
Spring 2003

Head Teaching Assistant for Ravi Ramamoorthi
Fall 2003

Head Teaching Assistant for Ravi Ramamoorthi
Fall 2004

Database Systems

Columbia University course COMS W4111 (upper division / graduate)

Head Teaching Assistant for Gravano
Fall 2002

Introduction to Database Systems

UC Berkeley course CS186 (upper division)

Teaching Assistant for Joseph Hellerstein
Spring 2001

Head Teaching Assistant for Michael Franklin
Fall 2001

Machine Structures

UC Berkeley course CS61c (lower division)

Teaching Assistant for Woojin Yu
Summer 2001

Pre-graduate Professional Experience

CoverAll — Van Nuys, CA (2005)

Independent Systems Consultant – Assess and advise.

Property Boulevard — New York / California (2002-2004)

Systems Programmer – Create integrated Help System.

IO Image — Hertzelia, Israel (2000)

Summer Internship – Member of data visualization team in image analysis research department.

Peer Review Service

ACM Siggraph

Transactions on Visualization and Computer Graphics

Eurographics Symposium on Rendering

Eurographics

The Visual Computer

Languages

English / Hebrew (fluent)

Spanish (working knowledge)

Other Interests and Hobbies

Bicycling, Camping, Sailing, Woodworking, Cooking, Traveling for family and leisure

References

1. Parag Havaldar

Lead Engineer

Sony Pictures Imageworks

The Development Group

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2. Frédo Durand

Associate Professor

MIT

Computer Graphics Group

32 Vassar Street

Cambridge, MA 02139

Phone : (617) 253-7223

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3. Eitan Grinspun

Assistant Professor

Columbia University

Computer Science Department

1214 Amsterdam Ave.

New York, NY 10027

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4. Dan Garcia

Assistant Professor

University of California

Computer Science Department

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