[Andrew Nealen.]

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Research interests

Computer graphics, geometric modeling, interaction techniques, digital games, physically-based modeling, texture synthesis, computer animation

Current position

Assistant Professor of Computer Science at Rutgers University

Education

- **Technische Universität Berlin**, Germany.
  Ph.D. in Computer Science (Summa Cum Laude), 2003 – September 2007.
  Thesis title: *Algorithms and Interfaces for the Creation, Modification and Optimization of Surface Meshes.*
- **Technische Universität Darmstadt**, Germany.
  M.Sc. (Dipl.-Inform.) in Computer Science, 1999 – May 2003.
  Thesis title: *Hybrid Texture Synthesis.*
- **University of British Columbia**, Canada.
  Fall 2001 – Spring 2002. Graduate Computer Science studies.
- **Technische Universität Darmstadt**, Germany.
  M.Sc. (Dipl.-Ing.) in Structural Engineering and Architecture, 1989 – August 1996. Thesis title: *Energy Conserving Construction Design in North America and Europe.*

Awards and Scholarships

- **I**NI-GraphicsNet best paper award (2006)
- **J**SPS scholarship for research at The University of Tokyo, Japan (2005)
- **I**NI-GraphicsNet best thesis award (2003)
- **D**AAD graduate scholarship for the University of British Columbia (2001 - 2002)
- **H**ighest ranked graduate student in Civil Engineering (1997)

PUBLICATIONS

Journal papers

- ◇ Johannes Zimmermann, Andrew Nealen and Marc Alexa. Sketching Contours. *Computers & Graphics*, 32(3):486–499, 2008.
- ◇ Andrew Nealen, Takeo Igarashi, Olga Sorkine and Marc Alexa. FiberMesh: Designing Freeform Surfaces with 3D Curves. *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*, 26(3), article no. 41, 2007.
- ◇ Andrew Nealen, Olga Sorkine, Marc Alexa and Daniel Cohen-Or. A Sketch-Based Interface for Detail-Preserving Mesh Editing. *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*, 24(3):1142–1147, 2005.
- ◇ Andrew Nealen, Matthias Müller, Richard Keiser, Eddy Boxerman and Mark Carlson. Physically-Based Deformable Models in Computer Graphics. *Computer Graphics Forum*, 25(4):809 - 836, 2005.

Refereed proceedings

- ◇ Johannes Zimmermann, Andrew Nealen and Marc Alexa. SilSketch: Automated Sketch-Based Editing of Surface Meshes. In *Eurographics Workshop on Sketch-Based Interfaces and Modeling*, 23–30, 2007.
- ◇ Andrew Nealen, Takeo Igarashi, Olga Sorkine and Marc Alexa. Laplacian Mesh Optimization. *ACM GRAPHITE*, 381–389, 2006.
- ◇ Anders Adamson, Marc Alexa and Andrew Nealen. Adaptive Sampling of Intersectable Models Exploiting Image and Object-space Coherence. In *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games*, 171–178, 2005.
- ◇ Matthias Müller, Richard Keiser, Andrew Nealen, Mark Pauly, Markus Gross and Marc Alexa. Point Based Animation of Elastic, Plastic and Melting Objects. In *ACM SIGGRAPH / Eurographics Symposium on Computer Animation*, 141–151, 2004.
- ◇ Andrew Nealen and Marc Alexa. Fast and High Quality Overlap Repair for Patch-Based Texture Synthesis. In *Computer Graphics International*, 582–585, 2004.
- ◇ Andrew Nealen and Marc Alexa. Hybrid Texture Synthesis. In *Eurographics Symposium on Rendering*, 97–105, 2003.

Book Chapters

- ◇ Marc Alexa and Andrew Nealen. Mesh Editing Based on Discrete Laplace and Poisson Models. In *Advances in Computer Graphics and Computer Vision*, Springer Berlin Heidelberg, 2008.

Technical reports

- ◇ Andrew Nealen and Olga Sorkine. A note on boundary constraints for linear variational surface design. Technical Report, TU Berlin, 2007.

Material science

- ◇ Peter Grübl, Andrew Nealen and Norbert Schmidt. Concrete made from recycled aggregate: experiences from the building project Waldspirale. In *Darmstadt Concrete – Annual Journal 14*, TU Darmstadt, 1999.
- ◇ Peter Grübl and Andrew Nealen. Construction of an office building using concrete made from recycled demolition material. In *Symposium on sustainable construction*, University of Dundee, 1998.
- ◇ Andrew Nealen and Sven Schenk. The Influence of recycled aggregate core moisture on freshly mixed and hardened concrete properties. In *Darmstadt Concrete – Annual Journal 13*, TU Darmstadt, 1998.
- ◇ Christoph Lemmer, Markus Rühl and Andrew Nealen. Correction of consistency of concrete made with aggregates from concrete rubble. In *Darmstadt Concrete – Annual Journal 13*, TU Darmstadt, 1998.
- ◇ Andrew Nealen and Markus Rühl. Consistency aspects in the production of concrete using aggregates from recycled demolition material. In *Darmstadt Concrete – Annual Journal 12*, TU Darmstadt, 1997.

Work experience

- ◇ **Assistant Professor of Computer Science**
  Rutgers University (September 2008 – Today)
- ◇ **Postdoctoral Researcher and Lecturer**
  Technische Universität Berlin (October 2007 – August 2008)
  Teaching: game design and programming
- ◇ **Research Assistant, Teaching Assistant and PhD Student**
  Technische Universität Darmstadt and
  Technische Universität Berlin (June 2003 – September 2007)
  Teaching: introductory and advanced computer graphics, linear algebra
- ◇ **Software Developer**, Signal 7, Darmstadt, Germany (May 2002 - May 2003)
  Red Bull Web-based Content Management System (`www.redbull.de`)
  Java J2EE/XML/XSL module development for a worldwide operating intranet system
- ◇ **Research and Teaching Assistant**
  Imager Computer Graphics Lab, UBC (September 2001 – April 2002)
  Research: port of existing graphics demo software to SGI OS
  Teaching: advanced software engineering, Java server programming
- ◇ **Software Developer**, Signal 7, Darmstadt, Germany (April 2000 - August 2001) Java module development for various content management systems
- ◇ **Research Assistant, Teaching Assistant and PhD Student**
  Technische Universität Darmstadt (July 1997 – December 1999)
  Teaching: material science, material mechanics, concrete construction
  Research: concrete construction, concrete recycling

◇ **Engineering/Architectural Consultant**
Reuter Architects and Engineers, Idstein, Germany (July 1989 - June 1997)
Worked in all key areas of construction planning, execution and management Design, construction and maintenance of bridges, urban housing, and industrial buildings.

STUDENTS CO-ADVISED

◇ **Kristian Bergmann**: User Interfaces Based on a Handheld Projection Screen. TU Berlin, M.Sc. Thesis (Dipl.-Inform.), Expected graduation: autumn 2008 (Co-advisor: Prof. Marc Alexa, TU Berlin)

◇ **Justus Pett**: Sketching Meshes. TU Berlin, M.Sc. Thesis (Dipl.-Inform.), May 2008 (Co-advisor: Prof. Marc Alexa, TU Berlin)

◇ **Johannes Zimmermann**: Automated, Sketch Based Editing of Triangle Meshes. TU Berlin, M.Sc. Thesis (Dipl.-Inform.), July 2007 (Co-advisor: Prof. Marc Alexa, TU Berlin)

◇ **Christian Appelt**: Real-Time 3D Vehicle Simulation. TU Berlin, Undergraduate Thesis, August 2007 (Co-advisor: Prof. Marc Alexa, TU Berlin)

◇ **Julien Koenen**: Image Space Smoothies for Real-Time Shadow Rendering on the GPU. TU Darmstadt, Undergraduate Thesis, February 2006 (Co-advisor: Prof. Marc Alexa, TU Darmstadt)

◇ **Falk Schaub**: Real-Time Shadow Rendering using Image and Object Space Techniques. TU Darmstadt, M.Sc. Thesis (Dipl.-Inform.), October 2004 (Co-advisor: Prof. Marc Alexa, TU Darmstadt)

◇ **Paulo Goncalves**: Simulating Landslides on the GPU. TU Darmstadt, M.Sc. Thesis (Dipl.-Ing.), October 2004 (Co-advisors: Prof. Stefan Schäfer, TU Darmstadt; Prof. Marc Alexa, TU Darmstadt)

◇ **Sven Schenk**: The Influence of recycled aggregate core moisture on freshly mixed and hardened concrete properties. TU Darmstadt, M.Sc. Thesis (Dipl.-Ing.), October 1998 (Co-advisor: Prof. Peter Grübl)

◇ **Norbert Schmidt**: Concrete made from recycled aggregate: Experiences from the building project Waldspirale. TU Darmstadt, M.Sc. Thesis (Dipl.-Ing.), October 1999 (Co-advisor: Prof. Peter Grübl)

RESEARCH VISITS

◇ The University of Tokyo, research visit, Autumn 2005. Interactive mesh construction, editing and optimization (with Takeo Igarashi).

◇ Tel Aviv University, research visit, Autumn 2004. Sketch based modeling interfaces and interactive shape editing (with Olga Sorkine and Daniel Cohen-Or).

◇ ETH Zürich, research visit, January 2004. Point Based Animation of Elastic, Plastic and Melting Objects (with Matthias Müller, Richard Keiser, Mark Pauly and Markus Gross) `http://www.pointbasedanimation.org`.

Professional activities

Program Committee member

- ◇ Eurographics/ACM SIGGRAPH 2009 Symposium on Geometry Processing
- ◇ ACM SIGGRAPH 2008 General + Late Breaking Jury
- ◇ ACM SIGGRAPH ASIA 2008 Sketches & Posters
- ◇ Eurographics 2008 Short Papers
- ◇ ACM SIGGRAPH 2007 Sketches & Posters

Talks at conferences and seminars

- ◇ Rutgers, The State University of New Jersey, April 2008
- ◇ Princeton Graphics Group, April 2008
- ◇ Université de Montreal, August 2007
- ◇ ACM SIGGRAPH Conference, San Diego, August 2007
- ◇ REVES/Inria Sophia Antipolis, June 2007
- ◇ ACM GRAPHITE Conference, Kuala Lumpur, November 2006
- ◇ Max Planck Insitut für Informatik, Saarbrücken, August 2006
- ◇ Ochanomizu University, November 2005
- ◇ The University of Tokyo, October 2005
- ◇ Eurographics Conference, Dublin, August 2005
- ◇ ACM SIGGRAPH Conference, Los Angeles, August 2005
- ◇ Tel Aviv University, October 2004
- ◇ Symposium on Computer Animation, Grenoble, August 2004
- ◇ Computer Graphics International, Crete, June 2004
- ◇ Eurographics Symposium on Rendering, Leuven, June 2003

Reviewer service

- ◇ **Conferences:** ACM SIGGRAPH, Eurographics, Eurographics/ACM SIGGRAPH Symposium on Geometry Processing, Eurographics Symposium on Rendering, Eurographics/ACM SIGGRAPH Symposium on Computer Animation, Pacific Graphics, Shape Modeling International, ACM Solid and Physical Modeling Symposium, ACM Web3D
- ◇ **Journals:** IEEE Transactions on Visualization and Computer Graphics, IEEE Transactions on Image Processing, IEEE Computer Graphics and Applications, Computer Graphics Forum, Computers & Graphics
- ◇ **Organizations:** International Game Developers Association (IGDA) Education SIG.

References

On request