

# Curriculum Vitae

## Personal Information

Name: Stefan Jeschke  
Academic Degree: Dipl.-Inf. Dr. Ing.  
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Languages: German, English

## Education

1995 – 2001 Studies in Computer Science at the University of Rostock, Germany, with emphasis on Computer Graphics  
Graduation as “Diplom-Ingenieur der Informatik” from the University of Rostock (Thesis: “Impostors for rendering acceleration”)  
2002 – 2005 Doctoral program (“Graduiertenkolleg” of the DFG) at the University of Rostock  
PhD degree (summa cum laude) at the University of Rostock (Thesis: “Accelerating the Rendering Process using Impostors”)

## Professional

Nov 1998 – March 1999 Working for Philips Medical Systems in Hamburg  
May 1999 – May 2000 Teaching assistant at the University of Rostock, Computer Graphics Department  
Oct 2001 – Feb 2002 Research assistant at Vienna University of Technology  
March 2002 – April 2005 PhD student at University of Rostock, Computer Graphics Department  
April 2005 – Oct. 2007 Research assistant at Vienna University of Technology FWF project ‘Treelumination’ (P17261-N04 )  
Oct. 2007 – May 2009 PostDoc at Arizona State University (Phoenix, Arizona)  
May 2009 – May 2012 Research assistant at Vienna University of Technology FWF project ‘Desiree’ (P20768-N13)  
May 2012 – Sep. 2016 PostDoc at IST Austria, Klosterneuburg, Austria, FWF Project ‘Deep Pictures’ (P24352-N23)  
Since Oct. 2016 Researcher in the NVIDIAameworks team

## Research Service

- Reviews for: Siggraph, Siggraph Asia, Eurographics, TVCG, Computer Graphics Forum, Pacific Graphics, Eurographics Symposium on Rendering, Symposium on Interactive 3D Graphics and Games, Graphics Interface, IEE Symposium on Interactive Raycasting, High-Performance Graphics, Graphite, Computers and Graphics, VAST, Computer Graphics and Applications, Computer Graphics International, GRAPP, WSCG, SSCG, OEAGM
- IPC Memberships: Pacific Graphics (2012, 2013, 2014, 2015, 2016, 2017, 2018), ISVC (2012, 2013, 2014, 2015, 2016, 2018), Sibgrapi (2014, 2016, 2017, 2018), SCCG (2017), Eurographics Symposium on Rendering (2008, 2009, 2010), High-Performance Graphics (2015), Eurographics Posters (2012), Siggraph Asia *Posters and Technical Briefs* (2014)
- Paper Review Chair for CESC (2006, 2007)

## Publications

1. **Stefan Jeschke**, Tomas Skrivan, Nuttapong Chentanez, Matthias Müller, Miles Macklin, Chris Wojtan:  
Water Surface Wavelets.  
In *Transactions on Graphics* (Siggraph conference), 37(4), August 2018.
2. Matthias Müller, Nuttapong Chentanez, **Stefan Jeschke**, Miles Macklin:  
Cable Joints.  
In *Proceedings of ACM Siggraph / Eurographics Symposium on Computer Animation*, July 2018.
3. **Stefan Jeschke** and Chris Wojtan:  
Water Wave Packets.  
In *Transactions on Graphics* (Siggraph conference), 36(4), August 2017.
4. Matthias Müller, Nuttapong Chentanez, Miles Macklin, **Stefan Jeschke**:  
Long Range Constraints for Rigid Body Simulations.  
In *Proceedings of ACM Siggraph / Eurographics Symposium on Computer Animation*, July 2017.
5. **Stefan Jeschke**:  
Generalized Diffusion Curves: An Improved Vector Representation for Smooth-Shaded Images.  
In *Computer Graphics Forum* (Eurographics conference), 35(2):1-9, May 2016.
6. Paul Guerrero, **Stefan Jeschke**, Michael Wimmer, Peter Wonka:  
Learning Shape Placements by Example.  
In *ACM Transactions on Graphics* (Siggraph conference), 34(4), August 2015.
7. **Stefan Jeschke** and Chris Wojtan:  
Water Wave Animation via Wavefront Parameter Interpolation.  
In *ACM Transactions on Graphics*, 34(3), April 2015 (presented at Siggraph 2015).
8. Paul Guerrero, Thomas Auzinger, Michael Wimmer, **Stefan Jeschke**:  
Partial Shape Matching using Transformation Parameter Similarity.  
In *Computer Graphics Forum*, 33(8):1-14, November 2014.
9. Murat Arikan, Reinhold Preiner, Claus Scheiblaue, **Stefan Jeschke**, Michael Wimmer:  
Large-Scale Point-Cloud Visualization through Localized Textured Surface Reconstruction.  
In *IEEE Transactions on Visualization & Computer Graphics*, 20(9):1280-1292, Sept. 2014.

10. Paul Guerrero, **Stefan Jeschke**, Michael Wimmer, Peter Wonka:  
Edit Propagation using Geometric Relationship Functions.  
In *ACM Transactions on Graphics*, 33(2):1-15, March 2014.
11. Thomas Auzinger, Michael Wimmer, **Stefan Jeschke**:  
Analytic Visibility on the GPU.  
In *Computer Graphics Forum* (Eurographics conference), 32(2):409-418, May 2013.
12. Thomas Auzinger, Michael Guthe, **Stefan Jeschke**:  
Analytic Anti-aliasing of Linear Functions on Polytopes.  
In *Computer Graphics Forum* (Eurographics conference). 31(2):335-344, May 2012.
13. Reinhold Preiner, **Stefan Jeschke**, Michael Wimmer:  
Autosplats: Dynamic Point Cloud Visualization on the GPU.  
In *Proceedings of Eurographics Symposium on Parallel Graphics and Visualization*, May 2012.
14. **Stefan Jeschke**, David Cline, Peter Wonka:  
Estimating Color and Texture Parameters for Vector Graphics.  
In *Computer Graphics Forum*, 30(2):523-532, (Eurographics conference) 2011.  
(2<sup>nd</sup> best paper award at Eurographics 2011)
15. **Stefan Jeschke**, David Cline, Peter Wonka:  
Rendering Surface Details with Diffusion Curves.  
In *ACM Transactions on Graphics*, 28(5):1-8, 2009.
16. **Stefan Jeschke**, David Cline, Peter Wonka:  
A Laplacian GPU Solver for Diffusion Curves and Poisson Image Editing.  
In *ACM Transactions on Graphics*, 28(5):1-8, 2009.
17. David Cline, **Stefan Jeschke**, Anshuman Razdan, Kenric White, Peter Wonka:  
Dart throwing on surfaces.  
In *Computer Graphics Forum*, 28(4):1217-1226, 2009.
18. Pushpak Karnik, David Cline, **Stefan Jeschke**, Anshuman Razdan, Peter Wonka:  
Route Visualization using Detail Lenses.  
In *IEEE Transactions on Visualization and Computer Graphics*, 16(2):235-247, 2009.
19. Pushpak Karnick, **Stefan Jeschke**, David Cline, Anshuman Razdan, E. Wentz, Peter Wonka:  
A Shape Grammar for Developing Glyph-based Visualizations.  
In *Computer Graphics Forum*, 28(8):2176-2188, 2009.
20. Deepali Bhagvat, **Stefan Jeschke**, David Cline and Peter Wonka:  
GPU Rendering of Relief Mapped Conical Frusta.  
In *Computer Graphics Forum*, 28(8): 2131-2139, 2009
21. Paul Guerrero, **Stefan Jeschke** and Michael Wimmer:  
Real-time Indirect Illumination and Soft Shadows in Dynamic Scenes Using Spherical Lights.  
In *Computer Graphics Forum*, 27(8):154-168, October 2008.
22. Daniel Scherzer, **Stefan Jeschke** and Michael Wimmer:  
Pixel-Correct Shadow Maps with Temporal Reprojection and Shadow Test Confidence.  
In *Rendering Techniques 2007 (Proceedings Eurographics Symposium on Rendering)*, pages 45-50, June 2007.

23. **Stefan Jeschke**, Stephan Mantler and Michael Wimmer:  
Interactive Smooth and Curved Shell Mapping.  
In *Proc. EUROGRAPHICS Symposium on Rendering*, June, 2007, Grenoble, France.
24. Ralf Habel, Michael Wimmer and **Stefan Jeschke**:  
Instant Animated Grass.  
In *Journal of WSCG* 15(1-3), pages 123-128, Jan. 2007.
25. Stephan Mantler and **Stefan Jeschke**:  
Interactive Landscape Visualization Using GPU Ray Casting.  
In *Proc. of Graphite 2006*, November 2006.
26. **Stefan Jeschke**, Michael Wimmer and Werner Purgathofer:  
Image-based Representation for Accelerated Rendering of Complex Scenes.  
In *Eurographics 2005 State-of-the-Art-Reports*, pages 1-20, August 2005.
27. **Stefan Jeschke**, Michael Wimmer, Heidrun Schuman and Werner Purgathofer:  
Automatic Impostor Placement for Guaranteed Frame Rates and Low Memory Requirements.  
In *Proc. Symposium on Interactive 3D Graphics and Games*, pages 103-110, Washington DC, April, 2005.
28. **Stefan Jeschke** and Michael Wimmer:  
Textured Depth Meshes for Real-Time Rendering of Arbitrary Scenes.  
In *Proc. EUROGRAPHICS Workshop on Rendering*, June, 2002, Pisa, Italy.
29. **Stefan Jeschke**, Michael Wimmer and Heidrun Schuman:  
Layered Environment-Map Impostors for Arbitrary Scenes.  
In *Proc. Graphics Interface*, pages 1-8, May, 2002, Calgary.
30. Uwe Rauschenbach, **Stefan Jeschke** and Heidrun Schuman:  
General Rectangular FishEye Views for 2D Graphics.  
*Computers&Graphics* 25 (4), pages 609-617, 2001.
31. Uwe Rauschenbach, **Stefan Jeschke** and Heidrun Schumann:  
General Rectangular FishEye Views for 2D Graphics,  
In: *IMC'2000 - Workshop on Intelligent Interactive Assistance and Mobile Computing*,  
Rostock-Warnemünde, Germany - November 9-10, 2000.

## Talks at Conferences

1. Water Wave Packets.  
ACM Siggraph, Los Angeles (USA), August 2017.
2. Generalized Diffusion Curves: An Improved Vector Representation for Smooth-Shaded Images.  
Eurographics Conference, May 2016.
3. Estimating Color and Texture Parameters for Vector Graphics.  
Eurographics Conference, April 2011.
4. Rendering Surface Details with Diffusion Curves.  
ACM Siggraph Asia, Yokohama (Japan), December 2009.
5. Interactive Smooth and Curved Shell Mapping.  
Eurographics Symposium on Rendering, Grenoble (France), June 2007.
6. Interactive Landscape Visualization Using GPU Ray Casting.  
Graphite 2006, Kuala Lumpur (Maaysia), November 2006.

7. Image-based Representations for Accelerated Rendering of Complex Scenes. Eurographics Conference, Dublin (Ireland), August 2005.
8. Automatic Impostor Placement for Guaranteed Frame Rates and Low Memory Requirements. Symposium on Interactive 3D Graphics and Games, Washington DC (ASU), April 2005.
9. Textured Depth Meshes for Real-Time Rendering of Arbitrary Scenes. Eurographics Workshop on Rendering, Pisa (Italy), June 2002.
10. Layered Environment-Map Impostors for Arbitrary Scenes. Graphics Interface, Calgary (Kanada), May 2002.

## Invited Talks

1. Recent Advances in Large-Scale Ocean Simulation  
VRVis Research Center, Vienna, Austria, March 2018.
2. Recent Advances in Vector Graphics Creation and Display.  
Brno University of Technology, Brno, Czech Republic, November 2016.
3. Diffusion Curves - A Geometric Image Representation in Two and Three Dimensions.  
IST Austria, Klosterneuburg, Austria, March 2012.
4. Estimating Color and Texture Parameters for Vector Graphics.  
Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic, Prague, Czech Republic, July 2011.
5. Estimating Color and Texture Parameters for Vector Graphics.  
Intitute for Computer Graphics, University of Rostock, Germany, April 2011.
6. Rendering Diffusion Curves in 2 and 3 Dimensions.  
Max Planck Institute for Informatics, Saarbruecken, Germany, October, 2010.
7. Diffusion Curve Rendering in 2D and 3D.  
Czech University of Technology, Prague, Czech Republic, October 2009.
8. Mein Weg danach.  
40 years of Computer Graphics at University of Rostock, Germany, September 2009.
9. Image-based Representations to Accelerate the Rendering of Complex Scenes.  
Czech University of Technology, Prague, Czech Republic, June 2005.
10. Textured Depth Meshes for Real-Time Rendering of Arbitrary Scenes.  
Konversatorium of the Computer Graphics Group in TU-Vienna, Austria, June 2002.

## Awards

2<sup>nd</sup> best paper award at Eurographics 2011 for the paper  
“Estimating Color and Texture Parameters for Vector Graphics”

## Teaching Activity

- Supervised diploma thesis at University of Rostock: Gerke Preussner (2004)

- Supervised diploma theses at Vienna University of Technology: Daniel Khankan (2005), Paul Guerrero (2007), Georg Selig (2008), Marcel Nuernberg (2011)
- Supervised masters thesis at Arizona State University: Deepali Bhagvat (2008)
- Supervised practical at Vienna University of Technology: Georg Selig (2005), Paul Guerrero (2006), Clemens Brandorff (2006), Simona Arustei (2006), Florian Rudolf (2007), Florian Reiterer (2007), Thomas Kment (2007), Wolf Reitsamer (2007), Daniel Priehler (2011), Florian Spechtenhauser (2012)
- Seminars held at Vienna University of Technology: “*Forschungsseminar aus Computergraphik und Bildverarbeitung*” (WS 2005, WS 2009, WS 2010, SS 2011), “*Seminar aus Computergraphik*” (SS 2007, WS 2012), “*Seminar mit Bakkalaureatsarbeit*” (SS 2005, WS 2006)
- Teaching Assistant at IST Austria “Partial Differential Equations” (spring 2013)

## Accepted Project Proposals

- 2006 FFG BRIDGE: “SCANOPY” cooperation between Vienna University of Technology and Imagination Computer Services GmbH
- 2007 FWF (P20768-N13): “DESIREE” at Vienna University of Technology
- 2009 Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology (partly involved)
- 2012 FWF (P 24352-N23): ”Deep Pictures: Creating Visual and Haptic Vector Images” (Principal Investigator)

## Conference and Workshop Organization

- 2006 Local organizer of the “*3<sup>rd</sup> Eurographics Workshop on Sketch-based Interfaces and Modeling*” (conference chair: Joaquim Jorge (P))

*Vienna (Austria), August 2017*