

# Curriculum Vitae

## Prof. Dr. Oliver Deussen

Chair Computer Graphics and Media Informatics  
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Born: 8th February 1966, married, three children

## Education

### Karlsruhe Institute of Technology (KIT), Germany

March 1996

Dr. rer nat in Computer Science  
Dissertation Title: *Efficient simulation methods for deformable bodies*  
Advisors: Professor Alfred Schmitt, Professor Rüdiger Dillmann

### Karlsruhe Institute of Technology (KIT), Germany

February 1991

Diploma in Computer Science  
Diploma Title: *Implicit modeling for contour matching*  
Advisor: Professor Alfred Schmitt

## Academic Employment

### Konstanz University, Germany

March 2003 - now

Full Professor (C4)  
Chair Computer Graphics and Media Informatics

### Konstanz University, Germany

March 2011 – now

Head of Curriculum and Studies

### Chinese Academy of Science

June 2010 – now

Visiting Professor  
SIAT Institute for Applied Technology, Shenzhen

### Microsoft Research, Redmond

Juli – September 2006

Visiting Researcher, Interactive Visual Media Group

**Konstanz University, Germany**

**March 2004 – September 2005**

Head of Department Computer and Information Science

**Dresden University of Technology, Germany**

**September 2000 – February 2003**

Associate Professor (C3)

Chair Media Design and Computer Graphics

**Otto-von-Guericke University of Magdeburg, Germany**

**April 1996 - August 2000**

Postdoctoral Researcher (C1) at the Institute for Simulation and Graphics

Head of Institute: Professor Thomas Strothotte

## Research

I am interested in computer graphics and visualization. In the last years I focused on the following fields: modeling and visualization of complex objects (botanic objects and landscapes), sampling and rendering foundations, non-photorealistic rendering techniques, and information visualization.

**Modeling and visualization of complex objects:** many applications in urban and environmental planning, in architecture, landscaping, ecology, arts, film and advertisement need complex objects and scenes for various types of visualizations. We found efficient algorithms for the creation, level-of-detail modeling and display of scenes with billions of surfaces. Our work concentrated on botanic objects (trees, landscapes). In 1996 I founded the companies Greenworks Organic Software ([www.greenworks.de](http://www.greenworks.de)) and later Xfrog, Inc. ([www.xfrog.com](http://www.xfrog.com)) to develop programs for plant modeling. One product is the well-known xfrog modeling software, which is used widely and was involved in many movie productions such as Avatar, Time Machine and Polar Express. A new company I am involved with is Laubwerk GmbH, a company that develops tree models for different purposes. Together with the Chinese Academy of Sciences (SIAT Shenzhen) we developed new methods for representing scanned trees, that enabled such data-driven models to be shown efficiently in computer graphics scenes.

**Sampling and rendering foundations:** Sampling is one of the basic problems of computer graphics. Good sampling strategies allow producing images with reduced or special kinds of noise. For many years it was not clear what characterizes good sampling sets. We developed various methods to produce such sets and finally found a mathematical description using Henkel transforms that allows characterizing and modifying such sets for various purposes.

**Non-photorealistic rendering techniques:** These techniques aim at creating abstract visual representations for various applications in simulation, visualization, film and arts. In contrast to the traditional rendering paradigm of creating images indistinguishable from photographs, non-photorealistic (abstract) rendering allows to vary details, alter shading styles and modify geometric representation within a single image. The attention of the viewer can be directed to intended parts, representational styles can help her/him to understand relations between objects, to distinguish between existing and planned objects and much more. Dealing with such rendering techniques allows medical and psychological researchers to explore and understand the functioning of our visual system.

**Information visualization:** This area tries to encode various kinds of information in the form of computer images. Such encodings help to visually explore complex data and are used in combination with data mining techniques. We worked in software visualization to structurally evaluate very large software systems, in visualization for Biology and Chemistry as well as in text visualization. Visualization of text might sound strange since text itself is a form of visualization. However, large amounts of texts, e.g. source code of software systems or large text corpora are getting invisible since they cannot be understood by reading. Visualization techniques allow assessing such corpora; the linguistic analysis enables systems to detect important themes and topics.

## Professional Profile

- **Co-Editor in Chief** of “**Computer Graphics Forum**”, the largest journal of computer graphics
- **Associated Editor** of „**Informatik Spektrum**“ (main German journal of informatics)
- **Head of INCIDE** - Interdisciplinary Center for Interactive Data Analysis, Modelling and Visual Exploration, University of Konstanz
- **Steering/Executive Committees:** Eurographics, „Computational Aesthetics“, NPAR (SIGGRAPH), FMX (Animation Conference)
- **Programm chair and/or organizer:** Eurovis 2004, Eurographics Symposium on Rendering 2005, NPAR 2007, Eurographics Workshop on Computational Aesthetics, 2009, Eurographics 2011, Pacific Graphics 2014
- awarded in 2007 by the **Virtual Earth Academic Collaboration of Microsoft Research** with 35,000 USD
- **Eurographics Fellow** (2013)
- 2014 awarded with the **1000 talents plan of the Chinese Central Government** (800.000 Euro)

## Current Projects:

- 2014 – 2017 **DFG Grant** DE 620/20-1 Effiziente Modellierung und Bilderzeugung für komplexe Landschaften (**250.000 Euro**)
- 2013 – 2015 **DFG Grant** AR 892/1 Non-photorealistic rendering for autism research (**250.000 Euro**)
- 2011 – 2014 **DFG Grant** BE 4812/1 Visual Analytics methods to steer the subspace clustering (**250.000 Euro**)
- 2007 – 2013 **State of Baden-Württemberg**, BW-FIT Program: Information at your Finger Tips - Visualization for Gigapixel displays (total **3,1 Mio Euro**, Coordination of the whole research group)
- 2007 – 2014 **DFG Grant** DE 620/14-1 Non periodic Tilings for Computer Graphics (**250.000 Euro**)
- 2010 – 2014 **DFG Grant** DE 620/16-1 Semantic Non-Photorealistic Rendering (**240.000 Euro**)
- 2011 – 2015 **EADS/Cassidian:** Rendering methods for advanced vision systems (**240.000 Euro**)
- 2011 – now **German Excellence Initiative**, INCIDE-Center, Visualization facility (**530.000 Euro**)

## Publications

### Journal Papers

- F. Yan, M. Gong, D. Cohen-Or, O. Deussen, B. Chen  
**Flower Reconstruction from a Single Photo**  
Computer Graphics Forum, 33(2), pp. 439-447, 2014 (Eurographics 2014 Conference Proceedings)
- D. Oelke, H. Strobel, C. Rohrdantz, I. Gurevych, O. Deussen:  
**Comparative Exploration of Document Collections: a Visual Analytics Approach**  
EuroVis2014 Proceedings, Computer Graphics Forum, 2014, to appear
- O. Št'ava, S. Pirk, J. Kratt, B. Chen, R. Mech, O. Deussen, B. Benes:  
**Inverse Procedural Modeling of Trees**,  
Computer Graphics Forum, 2014
- D. Heck, T. Schlömer, O. Deussen:  
**Blue Noise Sampling with Controlled Aliasing**

ACM Transactions on Graphics, 2013, 32(3):25:1–12

- Lindemeier, S. Pirk, O. Deussen:  
**Image Stylization with a Painting Machine Using Semantic Hints**  
Computers & Graphics 2013, doi: 10.1016/j.cag.2013.01.00
- S. Pirk, T. Niese, O. Deussen, B. Neubert:  
**Capturing and Animating the Morphogenesis of Polygonal Tree Models,**  
ACM Transactions on Graphics (Proceedings of Siggraph Asia), Volume 31 Issue 6, November 2012, Article 169
- M. Zinsmaier, U. Brandes, O. Deussen, and H. Strobel:  
**Interactive Level-of-Detail Rendering of Large Graphs ,**  
IEEE Transactions on Visualization and Computer Graphics (Proceedings InfoVis 2012), Volume: 18 (12), pp 2486-2495
- H. Strobel, E. Bertini, J. Braun, O. Deussen, U. Groth, T. U. Mayer, D. Merhof:  
**HiTSEE KNIME: A visualization tool for hit selection and analysis in high-throughput screening experiments for the KNIME platform,**  
BMC Bioinformatics 2012, 13(Suppl8):S4 doi:10.1186/1471-2105-13-S8-S4
- A. Stoffel, H. Strobel, O. Deussen, D. A. Keim:  
**Document Thumbnails with Variable Text Scaling,**  
Computer Graphics Forum, volume 31 issue 3 pp. 1165-1173, doi: 10.1111/j.1467-8659.2012.03109.x, (Proceedings EuroVis 2012)
- H. Strobel, M. Spicker, A. Stoffel, D. Keim, O. Deussen:  
**Rolled-out Wordles: A Heuristic Method for Overlap Removal of 2D Data Representatives,** Computer Graphics Forum 31(3), pp 1135-1144 (Proceedings EuroVis 2012)
- S. Pirk, O. Št'ava, J. Kratt, M. Abdul-Massih, B. Neubert, R. Měch, B. Beneš, O. Deussen:  
**Plastic Trees: Interactive Self-Adapting Botanical Tree Models**  
ACM Transactions on Graphics, (Proceedings of SIGGRAPH 2012), 31(4), Article No. 50
- C. Li, O. Deussen, Y. Song, P. Willis, P. Hall:  
**Modeling and generating moving trees from video**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2011), 30(6), Article No. 127
- J. Lin, D. Cohen-Or, H. Zhang, C. Liang, A. Sharf, O. Deussen, B. Chen :  
**Structure-Preserving Retargeting of Irregular 3D Architecture**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2011), 30(6), Article No. 183
- L. Nan, Andrei Sharf, Ke Xie, Tien-Tsin Wong, Oliver Deussen, Daniel Cohen-Or, Baoquan Chen:  
**Conjoining Gestalt Rules for Abstraction of Architectural Drawings**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2011), 30(6), Article No 185
- T. Schlömer, O. Deussen:  
**Accurate Spectral Analysis of Two-Dimensional Point Sets,**  
Journal of Graphics, GPU, and Game Tools, 15(3), pp 152-160, 2012
- Y. Livny, S. Pirk, Z. Cheng, F. Yan, O. Deussen, D. Cohen-Or, B. Chen:  
**Texture-Lobes for Tree Modeling**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2011), 30(4), Article No. 53
- B. Neubert, S. Pirk, O. Deussen, C. Dachsbacher:  
**Improved Model- and View-Dependent Pruning of Large Botanical Scenes**  
Computer Graphics Forum 30(6), pp 1708–1718, 2011

- O. Deussen, H. Bülthoff, T. Ertl, D. Keim, B. Lintermann, H. Reiterer, A. Schilling:  
**Visualisierung auf Großbildschirmen** (Visualization for Large Displays, in German)  
Informatik-Spektrum, 33:6, S. 551-558, Dez. 2010
- T. Schlömer, O. Deussen:  
**Semi-Stochastic Tilings for Example-Based Texture Synthesis**  
Computer Graphics Forum (Eurographics Symposium on Rendering), Vol. 29, No. 4, pp. 1431-1439, 2010
- M. Balzer, T. Schlömer, O. Deussen:  
**Capacity-Constrained Point Distributions: A Variant of Lloyd's Method**  
ACM Transactions on Graphics, 28(3), Article No. 86, 2009
- H. Strobel, D. Oelke, C. Rohrdantz, A. Stoffel, O. Deussen, D. Keim:  
**Document Cards: A Top Trumps Visualization for Documents**  
IEEE Transactions on Visualization and Computer Graphics, 15(6), pp. 1145-1152, 2009
- J. Kopf, D. Lischinski, O. Deussen, D. Cohen-Or, M. Cohen:  
**Locally Adapted Projections to Reduce Panorama Distortions**  
Computer Graphics Forum, Vol. 28:4, pp. 1083-1089, 2009
- X. Chen, B. Neubert, Y. Q. Xu, O. Deussen, S. B. Chang:  
**Sketch-based Tree Modeling Using Markov Random Field**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2008), 27(5), Article no. 109, 2008
- J. Kopf, B. Neubert, B. Chen, M. Cohen, D. Cohen-Or, O. Deussen, M. Uyttendaele, D. Lischinski:  
**Deep Photo: Model-Based Photograph Enhancement and Viewing**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2008), 27(5), Article no. 116, 2008
- J. Böttger., M. Preiser, M. Balzer, O. Deussen:  
**Detail-In-Context Visualization for Satellite Imagery,**  
Computer Graphics Forum, Vol. 27(4), pp. 587-596, 2008
- J. Kopf, C. Fu, D. Cohen-Or, O. Deussen, D. Lischinski, T. Wong:  
**Solid Texture Synthesis from 2D Exemplars**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2007), 26(3), Article No. 2, 2007
- J. Kopf, M. Uyttendaele, O. Deussen, M. Cohen:  
**Capuring and Viewing Gigapixel Images**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2007), 26(3), Article No. 93, 2007
- B. Neubert, T. Franken, O. Deussen:  
**Approximate image-based tree-modeling using particle flows**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2007), 26(3), Article No. 88, 2007
- J. Böttger, M. Balzer, O. Deussen:  
**Complex Logarithmic Views for Small Details in Large Contexts**  
IEEE Transactions on Visualization and Computer Graphics (Proceedings IEEE Symposium on Information Visualization), 12(5), pp. 845-852, 2006,
- T. Luft, C. Colditz, O. Deussen:  
**Image Enhancement by Unsharp Masking the Depth Buffer**  
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2006), 25(3), pp. 206-213, 2006
- J. Kopf, D. Cohen-Or, O. Deussen, D. Lischinski:  
**Recursive Wang Tiles for Real-Time Blue Noise**

ACM Transactions on Graphics (Proceedings of SIGGRAPH 2006),25(3), pp. 509-518, 2006

- T. Luft, O. Deussen:  
**Real-Time Watercolor for Animation**  
Journal of Computer Science and Technology, Volume 21(2), pp. 159-165, 2006, Springer
- H. Hellwig, R. Engelmann, O. Deussen:  
**Contact pressure models for spiral phyllotaxis and their computer simulation,**  
Journal of Theoretical Biology 240, pp. 489-500, 2006, Elsevier
- S. Behrendt, C. Colditz, O. Franzke, J. Kopf, O. Deussen:  
**Realistic real-time rendering of landscapes using billboard clouds**  
Computer Graphics Forum (Eurographics 2005 Conference Proceedings), 24(4), pp. 507-516, 2005
- M. Cohen, J. Shade, S. Hiller, O. Deussen:  
**Wang tiles for texture and image generation**  
ACM Transactions on Graphics (Proceedings SIGGRAPH 2003), 22(3), pp. 287-294, 2003
- S. Hiller, H. Hellwig, O. Deussen:  
**Beyond Stippling: methods for distributing objects in the plane**  
Computer Graphics Forum (Proceedings Eurographics 2003), 22(4), pp. 515-522, 2003
- O. Deussen:  
**A framework for geometry generation and rendering of plants with applications in landscape architecture**  
Landscape and Urban Planning, 64(1-2), pp. 105-113, Juni 2003, Elsevier Verlag
- O. Deussen:  
**Der virtuelle Spaziergang - Computergestützte Pflanzen als Visualisierungshilfe**  
Wiss. Zeitschrift TU Dresden, 2003
- B. Lintermann, O. Deussen:  
**Bildschirmbegrünung**  
C't 11/2003 (Computer Magazin in German), Heise Verlag
- O. Deussen:  
**Graphische Simulation und Visualisierung**  
Log-In 21(5-6), S. 2001 (Didactics for Informatics), Springer Verlag
- F. Ritter, B. Preim, O. Deussen, T. Strothotte:  
**3D-Puzzles, a new method for VR-based exploration of geometric models**  
IEEE Computer Graphics and Applications 21(5), pp. 11–13, September/Okttober 2001, IEEE Press
- O. Deussen:  
**Nichtrealistische Computergraphik, Algorithmen und Anwendungen**  
Informatik Spektrum 24(3), pp. 71-80, März 2001, Springer Verlag
- O. Deussen, B. Lintermann:  
**Computerpflanzen**  
Spektrum der Wissenschaft (Scientific American, German issue), pp. 58-65, Januar 2001
- O. Deussen, T. Strothotte:  
**Computer-Generated Pen-and-Ink Illustration of Trees**  
Computer Graphics (Proceedings SIGGRAPH 2000), 34(4), S. 13–18
- O. Deussen, S. Hiller, K. van Overveld, T. Strothotte:  
**Floating Points: A Method for Computing Stipple Drawings**  
Computer Graphics Forum (Eurographics 2000 Conference Proceedings), Vol. 19(4), pp. 41–50
- Ritter, J. Böttger, O. Deussen, M. König, Th. Strothotte:

### **Hardware-based rendering of full-parallax synthetic holograms**

Applied Optics, 38(8), pp. 1364-1369, March 1999, Optical Society of America

- B. Lintermann, O. Deussen:  
**Interactive Modelling of Plants,**  
IEEE Computer Graphics & Applications, 19(1), S. 56–65, January 1999
- O. Deussen, P. Hanrahan, B. Lintermann, R. Mech, M. Pharr, P. Prusinkiewicz:  
**Realistic Modelling and Rendering of Plant Ecosystems**  
Computer Graphics (Proceedings SIGGRAPH 1998), 18(3), pp. 275–286, 1998
- B. Lintermann, O. Deussen:  
**A Modelling Method and Interface for Creating Plants,**  
Computer Graphics Forum 17(1), January 1998, pp. 73–82, Pergamon Press
- O. Deussen, B. Lintermann:  
**Erzeugung komplexer botanischer Objekte in der Computergraphik**  
Informatik Spektrum 20(4), October 1997, pp. 208–215, Springer
- J. Borchers, O. Deussen, C. Knörzer, A. Klingert:  
**Layout Rules for Graphical Web-Documents**  
Computers & Graphics 20(3), May 1996, pp. 415–426, Pergamon Press
- J. Borchers, O. Deussen, C. Knörzer:  
**Getting it Across: Layout Issues for Kiosks Systems**  
SIGCHI Bulletin, 27(4), October 1995, pp. 68–74, ACM Press

### **Books and Editorships**

- O. Deussen  
**Bildmanipulation – wie Computer unsere Wirklichkeit verzerren**  
Sachbuch, Spektrum Akademischer Verlag, August 2007
- O. Deussen, B. Lintermann:  
**Digital Design of Nature, Computer generated Plants and Landscapes,**  
Springer-Verlag New-York, 2005
- O. Deussen, H. Müller, D. Saupe, H.-P. Seidel (Hrsg.):  
**Graphische Datenverarbeitung**  
Themenheft des Informatik-Spektrum, Dezember 2004, Springer-Verlag, Heidelberg
- O. Deussen, C. Hansen, B. Keim, D. Saupe (Hrsg.):  
**Eurographics IEEE/TVCG Symposium on Visualization 2004,**  
ACM/Eurographics Press
- O. Deussen:  
**Computergenerierte Pflanzen**  
Springer-Verlag 2003
- O. Deussen, V. Hinz, P. Lorenz (Hrsg.):  
**Simulation und Animation '99**  
SCS Society for Computer Simulation International, 1999
- O. Deussen, P. Lorenz (Hrsg.):  
**Simulation und Animation '97**  
SCS Society for Computer Simulation International, 1997
- O. Deussen:  
**Untersuchung effizienter Verfahren zur Bewegungssimulation deformierbarer Körper**  
Fortschrittsberichte Reihe 20: Rechnerunterstützte Verfahren VDI-Verlag, 1996
- Schmitt, O. Deussen, M. Kreeb:  
**Einführung in graphisch-geometrische Algorithmen**

### Peer-Reviewed Conference Articles / Book Chapters

- F. Eisenkeil, T. Schafhitzel, U. Kühne, O. Deussen  
**Clustering and visualization of non-classified points from LiDAR data for helicopter navigation**  
SPIE 9091: Signal Processing, Sensor/Information Fusion, and Target Recognition XXIII
- H. Janetzko, D. Jäckle, O. Deussen, D. Keim:  
**Visual Abstraction of Complex Motion Patterns**  
IS&T/SPIE Electronic Imaging 2014, Conference on Visualization and Data Analysis (VDA 2014),  
February 2-6, San Francisco, **best paper award**
- Julian Kratt, Liviu Coconu, Philip Paar, Timm Dapper, Oliver Deussen:  
**Adaptive Billboard Clouds for Botanical Tree Models**  
Digital Landscape Architecture" Conference 2014, at the ETH Zurich, Switzerland (May 21 – 23, 2014),
- Patrick Tresset and Oliver Deussen:  
**Artistically skilled embodied agents**  
Artificial Intelligence and Simulation of Behaviour 2014, Goldsmiths College, London
- O. Deussen and T. Isenberg:  
**Halftoning and Stippling. In Image and Video based Artistic Stylisation**  
pp. 45–61. Springer-Verlag, 2013, ISBN 978-1-4471-4518-9
- O. Deussen, T. Lindemeier, S. Pirk, M. Tautzenberger:  
**Feedback-guided Stroke Placement for a Painting Machine**  
Proceedings of the Eighth Annual Symposium on Computational Aesthetics in Graphics, Visualization,  
and Imaging, Pages 25-33, 2012
- Enrico Bertini, Hendrik Strobel, Joachim Braun, Oliver Deussen, Ulrich Groth, Thomas U. Mayer, Dorit  
Merhof:  
**HiTSEE: A Visualization Tool for Hit Selection and Analysis in High-Throughput Screening  
Experiments, [Honorable Mention]**  
Proceedings of 1st IEEE Symposium on Biological Data Visualization (BioVis), 2011, pp. 95-102
- Julian Kratt, Hendrik Strobel, Oliver Deussen:  
**Improving Stability and Compactness in Street Layout Visualizations**  
Proceedings of VMV 2011: Vision, Modeling and Visualization, 2011
- T. Schlömer, D. Heck, O. Deussen:  
**Farthest-Point Optimized Point Sets with Maximized Minimum Distance**  
HPG '11 Proceedings of the ACM SIGGRAPH Symposium on High Performance Graphics  
pp. 135-142, 2011
- S. Frey, T. Schlömer, S. Grottel, C. Dachsbacher, O. Deussen, T. Ertl:  
**Loose Capacity-Constrained Representatives for the Qualitative Visual Analysis in Molecular  
Dynamics**  
PACIFICVIS '11 Proceedings of the 2011 IEEE Pacific Visualization Symposium, pp 51-58
- O. Deussen:  
**Aesthetic Placement of Points Using Generalized Lloyd Relaxation**  
Proceedings Computational Aesthetics'09 Proceedings of the Fifth Eurographics conference on  
Computational Aesthetics in Graphics, Visualization and Imaging, pp. 123-128, 2009



- B. Chen, B. Neubert, E. Ofek, O. Deussen, M. Cohen:  
**Integrated Videos and Maps for Driving Directions**  
User Interface Science and Technology (UIST), 2009
- Gupta, P. Bhat, M. Dontcheva, M. Cohen, B. Curless, O. Deussen:  
**Enhancing and Experiencing Spacetime Resolution with Videos and Stills**  
International Conference on Computational Photography, 2009
- Urra, O. Deussen:  
**Informatik im Medien- und Bildungsmanagement – Programmiersprachen**  
Handbuch Medien- und Bildungsmanagement, Beltz Verlag, 2009
- J. Böttger, U. Brandes, O. Deussen, H. Ziezold:  
**Map Warping for the Annotation of Metro Maps**  
Pacific Visualization Symposium, Vo. 28(5), p. 56-65, 2008
- T. Luft, F. Kobs, W. Zinser, O. Deussen:  
**Watercolor Illustrations of CAD Data**  
Proceedings of the Fourth Eurographics conference on Computational Aesthetics in Graphics, Visualization and Imaging, pp. 57-63, 2008
- M. Balzer, O. Deussen:  
**Level-of-Detail Visualization of Clustered Graph Layouts**  
Asia-Pacific Symposium on Visualization (APVIS), pp. 133-140, 2007
- B. Neubert, T. Franken:  
**Methods for the automatic production of 3D plant models**  
fmx/06, 11th Conference on Animation, Effects, Realtime and Content, Stuttgart, 2006
- B. Bustos, O. Deussen, S. Hiller, D. Keim:  
**A Graphics Hardware Accelerated Algorithm for Nearest Neighbor Search**  
ICCS'06 Proceedings of the 6th international conference on Computational Science - Volume Part IV, pp. 196-199, 2006
- T. Luft, O. Deussen:  
**Real-Time Watercolor Illustrations of Plants Using a Blurred Depth Test**  
NPAR '06 Proceedings of the 4th international symposium on Non-photorealistic animation and rendering, pp. 11 – 20, Annecy, Frankreich, 5.-7. June, ACM Press, 2006
- L. Coconu, O. Deussen and H. Hege:  
**Real-Time Pen-and-Ink Illustration of Landscapes**  
NPAR '06 Proceedings of the 4th international symposium on Non-photorealistic animation and rendering, pp. 27 - 35, Annecy, Frankreich, 5.-7. June, ACM Press, 2006
- M. Alsweis, O. Deussen:  
**Wang-Tiles for the Simulation and Visualization of Plant Competition,**  
Lecture Notes in Computer Science 4035, Advances in Computer Graphics, 2006, pp. 1-11, Proceedings Computer Graphics International (CGI), 2006, Springer Verlag
- L.P. Fritzsche, H. Hellwig, S. Hiller, O. Deussen:  
**Interactive Design of Authentic Looking Mosaics Using Voronoi Structures**  
The 2nd International Symposium on Voronoi Diagrams in Science and Engineering VD 2005, pp. 1-11, Seoul, Korea
- T. Luft, O. Deussen:  
**Interactive Watercolor Animations,**  
Pacific Graphics 2005, Macau, 12–14. Oktober 2005

- M. Balzer, O. Deussen:  
**Voronoi Treemaps**  
Proceedings of the 2005 IEEE Symposium on Information Visualization, pp. 23-25, October 2005, IEEE Press
- M. Balzer, O. Deussen:  
**Exploring Relations within Software Systems Using Treemap Enhanced Hierarchical Graphs**  
3rd IEEE International Workshop on Visualizing Software for Understanding and Analysis 2005 (VISSOFT 2005), pp. 89-94, Budapest, Ungarn, September, 2005
- O. Deussen, C. Colditz, L. Coconu, H. Hege:  
**Efficient modeling and rendering of landscapes**  
In: I. Bishop and E. Lange (eds.): Visualization in Landscape and Environmental Planning, Taylor and Francis, 2005
- A. Dietrich, C. Colditz, O. Deussen, P. Slusallek:  
**Realistic and Interactive Visualization of High-Density Plant Ecosystems**  
Eurographics Workshop on Natural Phenomena, Dublin, 2005  
Eurographics Association
- B. Neidhold, O. Deussen, M. Wacker:  
**Interactive physically based Fluid and Erosion Simulation**  
Eurographics Workshop on Natural Phenomena, Dublin, 2005,  
Eurographics Association
- M. Alswies, O. Deussen:  
**Modeling and Visualization of symmetric and asymmetric plant competition**  
Eurographics Workshop on Natural Phenomena, Dublin, 2005
- M. Balzer, O. Deussen, C. Lewerentz:  
**Voronoi Treemaps for the Visualization of Software Metrics**  
ACM Symposium on Software Visualization 2005, St. Louis, USA, 14-15. Mai, 2005
- C. Colditz, L. Coconu, O. Deussen, H. Hege:  
**Real-time Rendering of Complex Photorealistic Landscapes Using Hybrid Level-of-Detail Approaches**  
Real-time visualization and participation, 6th International Conference for Information Technologies in Landscape Architecture, Dessau, 26-28. Juni 2005
- L. Coconu, H. Hege, O. Deussen:  
**Seamless Integration of Stylized Renditions in Computer-generated Landscape Visualization**, Real-time visualization and participation, 6th International Conference for Information Technologies in Landscape Architecture, Dessau, 26-28. Juni 2005
- M. Balzer, A. Noack, O. Deussen, C. Lewerentz:  
**Software Landscapes: Visualizing the Structure of Large Software Systems**  
Symposium on Visualization 2004, Konstanz 19-21.5.2004
- O. Deussen:  
**Computersimulation botanischer Formen und Wachstumsprozesse**  
In N. Karafyllis (Hrsg.): Biofakte, Mentis-Verlag, Paderborn, 2003
- O. Franzke, O. Deussen:  
**Accurate graphical representation of plant leaves**  
PMA03, 2003 international Symposium on Plant Growth, Modelling, Simulation, Visualization and their applications, Peking, 13.-16., Oktober 2003
- S. Hiller, C. Colditz, O. Deussen:  
**Spezifikation und Echtzeitvisualisierung von Vegetation und Landschaften**  
Simulation und Visualisierung 2003, Magdeburg, 06-07.03.2003, SCS-Verlag Europa
- O. Deussen:  
**The virtual Landscape - new advances in plant modelling and rendering**

4th Israel-Korea Bi-National Conference on Geometric Modeling and Computer Graphics,  
Tel-Aviv, Israel, 12.-14. Februar, 2003

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## Television

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- Siggraph Electronic Theater 2000 (Non-photorealistic Trees)
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#### **Media Reports (2013-2014)**

- **E-David Painting Robot:** <http://vimeo.com/68859229> Vimeo Staff Pick, Wired Magazine , Telegraph, Motherboard, Phys, Gizmodo, cnet, gizmag, The creator's project, Die Welt, Computerbild, Reutlinger Generalanzeiger, Glaserei Blog

#### **Invited Talks (from 2010)**

2010, March 12<sup>th</sup>, Tel Aviv University: Advances in Document Visualization

2010, March 16<sup>th</sup>, Technion: Illustrative Rendering- Science or Art?

2010, April 8<sup>th</sup>, Swansea University, RIVIC Graduate School: Illustrative Rendering- Science or Art?

2011, March 18<sup>th</sup>, University of Lugano: Computational Aesthetics

2011, Sept. 23<sup>rd</sup>, Harvard University, Plant Architecture

2011, Sept. 27<sup>th</sup>, Purdue University, Non-photorealistic Rendering Techniques

2012, Febr. 27<sup>th</sup>, Chinese Academy of Science, Beijing, Tree Modeling methods

2012, March 1<sup>st</sup>, Hefei IST, Tree Modeling methods

2013, February 20<sup>th</sup>, Cambridge University, Computer Graphics Modeling Problems

2013, April 8<sup>th</sup>, Singapore NUS, Future Cities Lab, The art of computer graphics modeling

2013, October 28<sup>th</sup>, Jinan, Shandong University, Non-photorealistic rendering techniques and their applications

2013, October, 29<sup>th</sup>, Chinese Academy of Science, Beijing, Non-photorealistic rendering techniques

2014, June 11<sup>th</sup>, ICCV 2014 Conference on Computational Creativity, Ljubljana, Non-photorealistic rendering getting physical

#### **Additional Board Memberships:**

2010-2013 RIVIC Wales Initiative on Scientific Computing

2011-present FMX conference steering committee

2013-present Eurographics Conference Steering Committee