Thomas Lindemeier

Curriculum Vitae

Education

2012–2018 **Dr.rer.nat.**, *University of Konstanz.*

2010–2012 **Master of Science**, *University of Konstanz*, *1.4.*
Visual Computing.

2005–2010 **Bachelor of Science**, *University of Konstanz*, *2.3.*
Information Engineering.

Doctoral Thesis

title *e-David: Non-Photorealistic Rendering using a Painting Machine*

supervisors Prof. Dr. Oliver Deussen and Prof. Dr. Marcel Waldvogel.

description Subject of the thesis was to build a painting machine and to implement associated algorithms to generate paintings and drawings using visual feedback optimization.

Experience

since 2018 **Software Engineer**, *Daimler Protics GmbH.*

2017–2018 **Research assistant and lecturer**, *University of Konstanz.*
Lecturer of the courses *Illustrative Computer Graphics* and *Global Illumination* as substitute for Prof. Dr. Deussen.

2012–2017 **Research assistant**, *University of Konstanz.*
Doctoral student and assistant at the work group *Visual Computing* of Prof. Deussen. Lead and assistance in various research projects and main researcher and developer of the e-David project. Lecturer and advisor of Bachelor's and Master's thesis in the field of Non-photorealistic rendering, computer graphics, computer vision and information visualization.

2009–2012 **Student assistant**, *University of Konstanz.*
Computer Graphics and Media Informatics work group of Prof. Deussen and *Bioinformatics and Information Mining* work group of Prof. Berthold.

2007–2009 **Intern and student employee**, *exorbyte GmbH*, Konstanz.
Development of backup and visualization tools.

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Languages

german	**First Language**
english	**Fluent**

Skills

Programming

C++	nine years	CMake	seven years
OpenCV	six years	OpenGL	three years
ROS	two years	Qt	three years
processing	five years	Java	two years

Soft Skills

- Empathy, respect
- Mentoring, coaching
- Creativity, decision making
- Self-supervision
- Positivity, humor
- Friendliness, team player
- Public speaking
- Problem solving, Feedback

Other

- Computer vision
- Non-photorealistic rendering
- Machine learning, deep learning
- OpenGL
- git, svn
- LaTeX
- Computer graphics
- Robotics
- Computational creativity
- GLSL
- Ubuntu Linux, Windows
- Writing and reviewing scientific articles

Interests

automatic painting	I am currently working on a new automatic painting system in my spare time that learns how to paint, using machine learning, especially (deep) reinforcement learning.
family	Spending time with my wife-to-be and son.
sports	Mountain biking, basketball.
computer games	Predominantly multiplayer games. Forming teams and figuring out strategies to reach a common goal with new people is challenging and fun.

Awards

2017	Best Paper at Expressive 2017 for paper [8]
2017	4th place at the RobotArt Competition (https://robotart.org/2017-winners/)
2016	4th place at the RobotArt Competition (https://robotart.org/2016-winners/)
2013	Vimeo staff pick for the video *e-David Robot Painting* (https://vimeo.com/68859229)
2012	Best Paper, Runner Up at CAe 2012 for paper [3]
2011	VAST Grand Challenge - Outstanding Comprehensive Submission [1]

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Teaching

- Illustrative Computergraphics
- Global Illumination
- Modelling in Computer Graphics
- Virtual and Augmented Reality
- Current Trends in Computer Graphics
- Research Paper Implementation - 2017, Institute of Animation, Filmakademie Ludwigsburg
- Research Paper Implementation - 2018, Institute of Animation, Filmakademie Ludwigsburg

Publications

[1] Bertini, E.; Buchmuller, J.; Fischer, F.; Huber, S.; Lindemeier, T.; Maass, F.; Mansmann, F.; Ramm, T.; Regenscheit, M.; Rohrdantz, C.; Scheible, C.; Schreck, T.; Sellien, S.; Stoffel, F.; Tautzenberger, M.; Zieker, M.; Keim, D. **Visual Analytics of Terrorist Activities Related to Epidemics**. *Visual Analytics Science and Technology (VAST)* (2011), 329–330.

[2] Deussen, O., and Lindemeier, T. **E-David: Wissenschaftlicher Versuch und malendes Monstrum**. In *Zufallszwänge - Roboterbilder zwischen Wissenschaft und Kunst - Catalogue of the exhibition in Konstanz.* University of Konstanz, Konstanz, 2013, pp. 39–45.

[3] Deussen, O., Lindemeier, T., Pirk, S., and Tautzenberger, M. **Feedback-guided Stroke Placement for a Painting Machine**. In *Proceedings of the Eighth Annual Symposium on Computational Aesthetics in Graphics, Visualization, and Imaging* (Goslar Germany, Germany, 2012), CAe '12, Eurographics Association, pp. 25–33.

[4] Lindemeier, T., Gülzow, M. J., and Deussen, O. **Painterly Rendering using Limited Paint Color Palettes**. In *Vision, Modeling & Visualization* (2018).

[5] Lindemeier, T., Metzner, J., Pollak, L., and Deussen, O. **Hardware-Based Non-Photorealistic Rendering Using a Painting Robot**. *Computer Graphics Forum 34*, 2 (2015), 311–323.

[6] Lindemeier, T., Pirk, S., and Deussen, O. **Image Stylization with a Painting Machine using Semantic Hints**. *Computers & Graphics 37*, 5 (Aug. 2013), 293–301.

[7] Lindemeier, T., Spicker, M., and Deussen, O. **Artistic Composition for Painterly Rendering**. In *Vision, Modeling & Visualization* (2016), M. Hullin, M. Stamminger, and T. Weinkauf, Eds., The Eurographics Association.

[8] Spicker, M., Hahn, F., Lindemeier, T., Saupe, D., and Deussen, O. **Quantifying Visual Abstraction Quality for Stipple Drawings**. In *Proceedings of the Symposium on Non-Photorealistic Animation and Rendering* (New York, NY, USA, 2017), NPAR '17, ACM, pp. 8:1–8:10.

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