

Bibliographical Sketch

Prof. Dr.-Ing. Andreas Kolb

Date of Birth	June, 4 th 1965
Academic Education	1986 –92: Studies in Mathematics (diploma), University Erlangen-Nuremberg 1992 –95: PhD studies in Computer Science, research area Computer Graphics, University Erlangen-Nuremberg
Professional Career	1992 –95: Researcher at the Computer Graphic group, University Erlangen-Nuremberg 1996 –98: Software-engineer and project leader at debis Systemhaus Engineering GmbH, Leinfelden 1998 –03: Professor (C3) for Media Information Science; University of Applied Sciences Wedel Since October 2003: Professur (C4) for Computer Graphics und Multimedia Systems, University of Siegen
Teaching	Computer Graphics, Visualization, Geometric Modeling, Virtual Reality (VR)
Research and Scientific Interests	<ul style="list-style-type: none"> • Simulation on graphics hardware • Real-time processing of sensor data and sensor fusion • Volume visualization, flow visualization • Mesh optimization and mesh reconstruction
Memberships	<ul style="list-style-type: none"> • Gesellschaft f. Informatik, FB "Graphische Datenverarbeitung" • EUROGRAPHICS Association • ACM/SIGGRAPH • NRW Center for Sensor Systems (ZESS)
Committees and Reviewing	<ul style="list-style-type: none"> • Editorial Board: Journal Simulation Practice & Theory • Speaker of the DFG research package "Dynamic 3D Vision" (seit 2006) • DFG ombudsman of the University of Siegen • Open SG Forum, Web3D Symp, GI VR/AR-Workshop, Dynamic 3D Imaging Workshop (with DAGM), ToF-Camera based Computer-Vision (with CVPR) • Reviewer for MITACS (Math. of Inform. Tech. & Complex Sys., CAN) • Reviewer for SNF (Swiss National Science Foundation) • Reviewer for SIGGRAPH, Eurographics, ACM-TOG, CGF, CAD, CAGD, SIMPRA, IEEE-TSMC, IEEE-TGRS, J. Visual Computer etc.
PhD Students, Habilitations	<ul style="list-style-type: none"> • 3 doctorates as 2nd supervisor • 6 ongoing doctorates • 1 ongoing habilitation
Fundings	2002 –04: Optimization and texturing of polygon models for VR applications (AiF, Gant ID 1706002) 2006 –09: PMD-Simulation and dynamic environment modeling (BMBF cooperative project "Lynkeus") 2006 –10: Real-time acquisition of image-based 3D models for object recognition (DFG, Ko-2960-6/1, -2, PAK 73) 2006 –10: 2D/3D data processing and data fusion with PMD-sensors (DFG, Ko-2960-5/1, -2, PAK 73) 2006 –10: Interactive processing and visualization of SAR data(DFG, Ko-2960-3/1, -2, PAK 59) 2008 –10: Development of integral hetero-sensor architectures for n-dimensional (bio)chemical analysis (Graduiertenkolleg, Uni. Siegen)
Internet	http://www.cg.fb12.uni-siegen.de/

Publications (since 2002)

1. Lambers, M. ; Kolb, A.: Adaptive dynamic range reduction for SAR images. In: Proceedings of European Conference on Synthetic Aperture Radar (EUSAR), 2008. accepted for publication.
2. Todt, S. ; Langer, M. ; Rezk-Salama, C. ; Kolb, A. ; Kuhnert, K.: Spherical light field rendering in application for analysis by synthesis. In: *Int. J. on Intell. Systems and Techn. and App., Special Issue on Dynamic 3D Imaging*, 2008. accepted for publication.
3. Lindner, M. ; Lambers, M. ; Kolb, A.: Sub-pixel data fusion and edge-enhanced distance refinement for 2D/3D images. In: *Int. J. on Intell. Systems and Techn. and App., Special Issue on Dynamic 3D Imaging*, 2008. accepted for publication.
4. Kolb, A. ; Leschke, R. ; Reinhard, T.: Interaktion - Ein Begriff zwischen den Wissenschaften. In: *Navigationen - Special Issue: Interaktionen*. Transcript Verlag, 2008. accepted for publication.
5. Cuntz, N. ; Lambers, M. ; Rezk-Salama, C. ; Kolb, A.: Fundamentals for GPU-based Interactive Visualization. In: *Interactive Visualisation*. Springer, 2008. accepted for publication.
6. Horz, T. ; Pritzkau, A. ; Rezk-Salama, C. ; Todt, S. ; Kolb, A.: Gaming technology in cultural heritage systems. In: *Proceedings of GAMEON*, 2007. - ISBN: 9789077381373, S. 147-151.
7. Kuhnert, K. ; Langer, M. ; Stommel, M. ; Kolb, A.: Dynamic 3D Vision. In: Obinata, G. (Hrsg.) ; Dutta, A. (Hrsg.): *Vision Systems - Applications*. Wien, Österreich : I-Tech Education and Publishing, 2007. - ISBN 978-3-902613-01-1, S. 311-334.
8. Kolb, A. ; Rezk-Salama, C. ; Venus, J.: Displaying Interplay - Entwicklungstrends der Mensch-Maschine Interaktion. In: Schröter, J. (Hrsg.) ; Thielmann, T. (Hrsg.): *Navigationen - Special Issue: Display II Digital*, 2007. - ISBN: 3-89472-546-X, S. 165-179.
9. Lindner, M. ; Kolb, A.: Calibration of the intensity-related distance error of the PMD-TOF-camera. In: *Proceedings of SPIE, Intelligent Robots and Computer Vision 6764OW*, 2007. - DOI: 10.1117/12.752808.
10. Cuntz, N. ; Kolb, A.: Fast hierarchical 3D distance transforms on the GPU. In: *Proceedings of Eurographics – Short Papers*. 2007. – ISSN 1017-4656, S. 93-96.
11. Todt, S. ; Rezk-Salama, C. ; Horz, T. ; Pritzkau, A. ; Kolb, A.: An interactive exploration of the virtual stronghold Dillenburg. In: *Proceedings of Eurographics – Cultural Heritage Papers*, 2007, S. 17-24.
12. Lindner, M. ; Kolb, A. ; Hartmann, K.: Data-Fusion of PMD-Based Distance-Information and High-Resolution RGB-Images. In: *International Symposium on Signals, Circuits and Systems (ISSCS)*. Iasi, Rumänien : IEEE CAS Society, 2007. - ISBN: 1-4244-0969-1. DOI: 10.1109/ISSCS.2007.4292666, S. 121-124.
13. Keller, M. ; Kolb, A. ; Peters, V.: A Simulation Framework for Time-Of-Flight Sensors. In: *International Symposium on Signals, Circuits and Systems, Circuits and Systems (ISSCS)*. Iasi, Rumänien : IEEE CAS Society, 2007. - ISBN: 1-4244-0969-1. DOI: 10.1109/ISSCS.2007.4292667, S. 125-128.

14. Lambers, M. ; Kolb, A. ; Nies, H.: GPU-based framework for interactive visualization of SAR data. In: *Proc. Int. IEEE Geoscience and Remote Sensing Symposium (IGARSS)*. IEEE, 2007.
15. Streckel, B. ; Bartczak, B. ; Koch, R. ; Kolb, A.: Supporting structure from motion with a 3D-range-camera. In: *Scandinavian Conf. Image Analysis (SCIA) LNCS 4522*, Berlin : Springer, 2007. - ISBN: 978-3-540-73039-2. DOI: 10.1007/978-3-540-73040-8_24, S. 233-242.
16. Cuntz, N. ; Leidl, M. ; Kolb, A. ; Rezk-Salama, C. ; Böttinger, M.: GPU-based dynamic flow visualization for climate research applications. In: Schulze, T. (Hrsg.) ; Preim, B. (Hrsg.) ; Schumann, H. (Hrsg.): *Proceedings of Simulation and Visualization*. Erlangen : SCS Publishing House e.V., 2007 - ISBN: 3-936150-50-8, S. 371-384.
17. Lindner, M. ; Kolb, A.: Lateral and depth calibration of PMD-distance sensors. In: *Proc. Int. Symp. on Visual Computing LNCS 4292*, Berlin : Springer, 2006. - ISBN: 978-3-540-48626-8. DOI: 10.1007/11919629, S. 524–533.
18. Mehnert-Spahn, J. ; Steck, S. ; Kolb, A.: A Cross-Platform Approach for User-Interaction in Virtual Environments. In: *Proceedings der 9. IFF Fachtagung zu Virtual Reality und Augmented Reality*. Magdeburg : Fraunhofer IFF, 2006. - ISBN 978-3-8167-7124-1, S. 321–328.
19. Rezk-Salama, C. ; Kolb, A.: Opacity peeling for direct volume rendering. In: *Computer Graphics Forum (Proc. Eurographics) 25*, 2006, Nr. 3. – ISSN 0167-7055, S. 597-606.
20. Ender, J. ; Klare, J. ; Walterscheid, I. ; Brenner, A.R. ; Weiß, M. ; Kirchner, C. ; Wilden, H. ; Löffeld, O. ; Kolb, A. ; Wiechert, W. ; Kalkuhl, M. ; Knedlik, S. ; Gebhardt, U. ; Nies, H. ; Natroshvili, K. ; Ige, S. ; Medrano Ortiz, A. ; Amankwah, A.: Bistatic Exploration using Spaceborne and Airborne SAR Sensors: A Close Collaboration Between FGAN, ZESS, and FOMAAS. In: *IEEE International Conference on Geoscience and Remote Sensing Symposium, IGARSS*, 2006. - ISBN: 0-7803-9510-7. DOI: 10.1109/IGARSS.2006.472, S. 1828–1831.
21. Rezk-Salama, C. ; Kolb, A.: A Vertex Program for Efficient Box-Plane Intersection. In: *Proc. Vision, Modeling and Visualization (VMV)*, 2005. - ISBN: 3-89838-068-82-2, S. 115-122.
22. Kolb, A. ; Rezk-Salama, C.: Efficient Empty Space Skipping for Per-Pixel Displacement Mapping. In: *Proc. Vision, Modeling and Visualization (VMV)*, 2005. - ISBN: 3-89838-068-82-2, S. 407-414.
23. Strzodka, R. ; Doggett, M. ; Kolb, A.: Scientific computation for simulations on programmable graphics hardware. In: *Simulation Modelling Practice and Theory, Special Issue: Programmable Graphics Hardware 13*, 2005, Nr. 8. - DOI: 10.1016/j.simpat.2005.08.001, S. 667-680.
24. Kolb, A. ; Cuntz, N.: Dynamic Particle Coupling for GPU-based Fluid Simulation. In: *Proc. 18th Symposium on Simulation Technique*, Erlangen : SCS Publishing House, 2005. - ISBN: 3-936150-41-9, S. 722-727.
25. Todt, S. ; Rezk-Salama, C. ; Kolb, A.: Real time fusion of range and light field images. In: *SIGGRAPH '05: ACM SIGGRAPH 2005 Posters*. New York : ACM, 2005. - DOI: 10.1145/1186954.1187028, S. 65.
26. Bastuck, C. ; Hambürger, T. ; Hof, T. ; Keller, M. ; Kohlmann, P. ; Mehnert, J. ; Nowak, S. ; Rezk-Salama, C. ; Kolb, A.: An Open and Extensible Framework for Visualization. In: Gesellschaft für Informatik (Hrsg.): *Informatiktage 2005*. 2005, S. 151-154.

27. Kolb, A. ; Latta, L. ; Rezk-Salama, C.: Hardware-based Simulation and Collision Detection for Large Particle Systems. In: Akenine-Möller, T. (Hrsg.) ; McCool, M. (Hrsg.): *Proc. Graphics Hardware*, 2004. - ISBN 3-905673-15-0, S. 123-131.
28. Latta, L. ; Kolb, A.: Homomorphic factorization of BRDF-based lighting computation. In: *SIGGRAPH '02: Proceedings of the 29th annual conference on Computer graphics and interactive techniques*. New York : ACM, 2002. - ISBN: 1-58113-521-1. DOI: 10.1145/566570.566610, S. 509-516.
29. Greiner, G. ; Kolb, A. ; Riepl, A.: Scattered Data Interpolation Using Data-dependent Optimization Techniques. In: *Graphical Models 64*, 2002. - DOI: 10.1006/gmod.2001.0542, S. 1-18.