

Curriculum Vitae

Prof. Dr.-Ing Andreas Kolb

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June 4th 1965 Born in Radolfzell (Lake Constance), Germany

Education

08/92 – 12/95 Dissertation in Computer Graphics, University of Erlangen-Nuremberg
Thesis: “Optimization Techniques for Scattered Data Interpolation”
10/86 – 02/92 Study of Mathematics, University of Erlangen-Nuremberg
07/82 – 06/85 Abitur, Technical Gymnasium Konstanz

Academic and Professional History

since 10/03 Full Professor (Chair for Computer Graphics and Multimedia Systems), University of Siegen, Germany
10/98 – 09/03 Professur for Media Informatics, University of Applied Science Wedel, Germany
03/97 – 07/98 Lecturer for Computer Graphics (part-time), University of Applied Science Aalen, Germany
01/96 – 09/98 Software-Engineer and project leader, debis Systemhaus Engineering, Leinfelden-Echterdingen, Germany
08/92 – 12/95 Research associate, University of Erlangen-Nuremberg, Germany
04/92 – 06/92 Software-Engineer, Siemens Medical Solutions, Erlangen, Germany

Teaching

Computer Graphics, Visualization, Computer Vision and Virtual Reality

Current Research Topics

Simulation and data processing on graphics hardware
Processing and fusion of 3D sensor data
Hardware accelerated rendering

Coordination and Committees

2017 Organization Committee: Dagstuhl Seminar on *Hyperspectral, Multispectral, and Multimodal (HMM) Imaging: Acquisition, Algorithms, and Applications*, Schloss Dagstuhl, Germany
2016 Int. Programmkommittee Eurographics Conference, Lisbon, Portugal
2014 Program Committee: Int. Conf. on 3D Computer Vision (3DV)
2013 Organisation Committee: GCPR Workshop *Imaging New Modalities*, Saarland University

- 2013 Programme Committee: Vision, Modeling and Visualization (VMV), University Lugano, Switzerland
- 2013 Int. Programme Committee Eurographics Conference, Girona, Spain
- 2012 Organization Committee: Dagstuhl Seminar on *3D Time-of-Flight Technologies*, Schloss Dagstuhl, Germany
- 2012 Programme Committee: Vision, Modeling and Visualization (VMV), University Magdeburg
- 2012 Int. Programme Committee Eurographics Conference, Cagliari, Sardinia, Italy
- 2011 Programme Conference: Vision, Modeling and Visualization (VMV), Fraunhofer HHI, Berlin
- 2010 Local Chair: Vision, Modeling and Visualization (VMV), Siegen
- 2010 Int. Programme Conference Eurographics Conference, Linköping, Sweden
- since 2009 Speaker of the DFG Research Training Group “Imaging New Modalities” (GRK 1564)
- 2009 Paper Chair: DAGM Workshop Dynamic 3D Imaging, University of Jena, Germany
- 2009 Programm Committee: Vision, Modeling and Visualization (VMV), University of Braunschweig, Germany
- 2008 Organisation Committee: CVPR Workshop ToF-Camera based Computer Vision
- 2007 Organisation Committee: DAGM Workshop Dynamic 3D Imaging, University of Heidelberg, Germany
- since 2007 Program Committee: GI¹ VR/AR Workshop
- 2006 – 2010 Speaker of the DFG research package “Dynamic 3D Vision” (PAK 73)
- 2003 Program Committee: Open SG Forum
- 2003 Program Committee: Web3D Symposium
- since 2004 Stearing committee of the GI *Geometry Processing*

Editor and Reviewer

- 2017 Co-editor of the special issue on *Imaging Depth Sensors—Sensors, Algorithms and Applications*, Sensor Journal, MPDI
- 2013 Co-editor *A State-of-the-Art Survey on Time-of-Flight and Depth Imaging: Sensors, Algorithms, and Applications*, Springer
- since 2010 Editorial Board Member Journal *3D Research*, Springer
- 2010 Co-editor of the proceedings *Vision, Modeling and Visualization*, Eurographics Ass.
- 2010 Co-editor of the special issue on *Time of Flight Camera based Computer Vision*, Journal CVIU, Elsevier
- 2009 Co-editor of the proceedings *Dynamic 3D Imaging*, Springer
- since 2007 DFG Ombudsman at University of Siegen
- 2006 – 2014 Editorial Board Member, Journal *Simulation Practice & Theory (SIMPAT)*, Elsevier
- 2005 Editor of the special issue on *Programmable Graphics Hardware*, Journal SIMPAT
- Projects Reviewer for DFG, MITACS², SNF³
- Publications Reviewer for: SIGGRAPH, Eurographics, ACM-TOG, CGF, CAD, CAGD, SIMPAT, IEEE-TVCG, IEEE-TSMC, IEEE-TGRS, IEEE-Vis, EG Symp. on Rendering

Memberships

- since 2004 Center for Sensor Systeme (ZESS), University of Siegen
- since 2002 ACM/SIGGRAPH
- since 2001 EUROGRAPHICS Association
- since 1998 GI, Section *Graphical Data Processing* (Computer Graphics)

¹Gesellschaft für Informatik

²Mathematics of Information Technology and Complex Systems, Canada

³Swiss National Science Foundation, Switzerland

University Service

05/15 – 03/17	Co-Chair of the Scientific Advisory Board of the Faculty for Science and Technology of the University of Siegen
seit 02/15	Member in the Faculty Council of the Faculty for Science and Technology of the University of Siegen
2015	Head of the Appointment Committee <i>Ubiquitous Computing</i>
since 07/11	Member in the Research Advisory Board of the Faculty for Science and Technology of the University of Siegen
02/11 – 01/15	Vice Dean for Research and Junior Scientists of the Faculty for Science and Technology of the University of Siegen
04/10 – 02/11	Chief Information Officer (CIO) of the University of Siegen
since 2009	Speaker of the DFG Research Training Group 1564 <i>Imaging New Modalities</i>
2009 – 2010	Member of the IT-Steering Committee of the University of Siegen
2008 – 2010	Member of the Faculty Council <i>Electrical Engineering & Computer Science</i>
2004	Head of the Appointment Committee <i>Media Information Science</i>

Personal

married, three children

Project Funding

The third party funds do not include any overhead costs.

- [1] A. Kolb, S. Schubert, and V. Braun. Visually integrated clinical cooperation. DFG Sonderforschungsbereich 1187: Media of Cooperation, 2016-2020. individual project share ca. 280.000 EUR.
- [2] A. Kolb and R. Koch. Dynamic light fields. DFG Sachbeihilfe, grant Ko-2960-13/1, 2014-2018. individual project share ca. 217.000 EUR.
- [3] A. Kolb. PMD -modeling, -simulation, -evaluation & algorithms. DFG Sachbeihilfe (Transferprojekt), grant Ko-2960-12/1, 2014-2018. individual project share ca. 260.000 EUR.
- [4] A. Kolb. Robust sensor fusion and feature extraction. DFG Graduiertenkolleg 1564-2: Imaging New Modalities, 2014-2018. individual project share ca. 350.000 EUR.
- [5] A. Kolb. Multimodal 3D reconstruction and material classification. DFG Graduiertenkolleg 1564-2: Imaging New Modalities, 2014-2018. individual project share ca. 350.000 EUR.
- [6] U. Pietsch and A. Kolb. Development and application of a 2D-energy dispersive detectors for synchrotron and fel experiments. BMBF joint project, grant 05K10PSB, 2010-2013. individual project share 178.000 EUR.
- [7] P. Haring and A. Kolb. Interactive visualization and exploration of 3D-THz data. BMBF joint project LiveDetect3D, grant 13N11001, 2010-2012. individual project share 232.000 EUR.
- [8] A. Kolb and P. Haring. Interactive multifunctional confocal image analysis. DFG Sachbeihilfe, grant Ko-2960-10/1,2, 2010-2018. individual project share ca. 276.000 EUR.
- [9] A. Kolb. Contact-free acquisition of vehicle contours for controlling car-wash-systems using pmd sensors. AiF-Projekt, grant KF2383701RR9, 2010-2011. individual project share 158.000 EUR.
- [10] A. Kolb. Evaluation of the facet-eye principle. BMBF joint project, grant 16SV5267, 2010-2011. individual project share 65.000 EUR.
- [11] A. Kolb. Biometrics by multispectral scattering models. DFG Graduiertenkolleg 1564-1: Imaging New Modalities, 2009-2014. individual project share ca. 350.000 EUR.
- [12] A. Kolb. Visual analysis of multimodal sensor data. DFG Graduiertenkolleg 1564-1: Imaging New Modalities, 2009-2014. individual project share ca. 350.000 EUR.
- [13] A. Kolb. Partikel-based simulation of chemical micro sensors. University of Siegen Graduate School: Integral Hetero-Sensor Architectures for n-dimensionale (bio)chemical Analytics, 2007-2011. individual project share ca. 30.000 EUR.
- [14] A. Kolb and K.-D. Kuhnert. Real time acquisition of image based 3D models for object recognition. DFG research package Dynamic 3D Vision (PAK 73), grant Ko-2960-6/1,2, 2006-2011. individual project share ca. 260.000 EUR.
- [15] A. Kolb. 2D/3D data processing and fusion for pmd sensors. DFG research package Dynamic 3D Vision (PAK 73), grant Ko-2960-5/1,2, 2006-2011. individual project share ca. 260.000 EUR.
- [16] A. Kolb and O. Loffeld. Interactive processing and visualization of sar data. DFG research package Bistatic Exploration (PAK 59), grant Ko-2960-3/1,2, 2006-2011. individual project share ca. 195.000 EUR.
- [17] A. Kolb and P. Haring. Pmd simulation and modelling of dynamic environments. BMBF joint project Lynkeus, grant 16SV2296-310, 2006-2009. individual project share 217.000 EUR.

Supervisions

Besides some 60 Bachelor, Master and Diploma theses the following PhD theses and habilitations have been supervised or are close to completion:

- [1] D. Lefloch. *Real-Time Processing of Range Data Focusing on Environment Reconstruction*. PhD thesis, University of Siegen, 26.01.2018. (second reviewer: Prof. Dr. T. Weyrich, University College London, UK).
- [2] M. Pätzold. *Graphical Models and Simulation for THz-Imaging*. PhD thesis, University of Siegen, 24.01.2018. (second reviewer: Prof. Dr. P. Haring Bolívar, University of Siegen, Germany).
- [3] T. Hoegg. *Efficient Range and Image Data Processing – Algorithms and Software Paradigms*. PhD thesis, University of Siegen, 18.10.2017. (second reviewer: Prof. Dr. M. Stamminger, University of Erlangen, Germany).
- [4] M. Heredia Conde. *Compressive Sensing for the Photonic Mixer Device*. PhD thesis, University of Siegen, Center for Sensor Systems, 14.11.2016. (second reviewer).
- [5] H. Steiner. *Active Multispectral SWIR Imaging for Reliable Skin Detection and Face Verification*. PhD thesis, University of Siegen, Computer Graphics Group, 2.11.2016. (second reviewer: Prof. Dr. V. Blanz, University of Siegen, Germany).
- [6] A. Grote. *Integrale Betrachtung zur systematischen Definition von 3D Bildgebungssystemen in der Produktionstechnik*. PhD thesis, University of Siegen, Institute for High Frequency and Quantum Electronics, 4.10.2016. (second reviewer).
- [7] M. Keller. *Real-time Simulation of Time-of-Flight Sensors and Accumulation of Range*. PhD thesis, University of Siegen, Computer Graphics Group, 13.11.2015. (second reviewer: Prof. Dr. R. Koch, University of Kiel, Germany).
- [8] J. Orthmann. *Efficient SPH-based Simulation and Rendering of Fluid Transport Dynamics*. PhD thesis, University of Siegen, Computer Graphics Group, 14.11.2014. (second reviewer: Prof. Dr. M. Teschner, University of Freiburg, Germany).
- [9] D. Jung. *Depth Image-Based Rendering for Full Parallax Displays*. PhD thesis, University of Kiel, Institute of Computer Science, 7.11.2014. (second reviewer).
- [10] D. Zukic. *An Efficient Inflation Method for Segmentation of Medical 3D Images*. PhD thesis, University of Siegen, Computer Graphics Group, 8.9.2014. (second reviewer: Prof. Dr. G. Scheuermann, University of Leipzig, Germany).
- [11] D. Fiedler. *Beiträge zur Analyse, Modellierung und Kalibrierung von Kameras und 3D-Tiefensensoren*. PhD thesis, Technische Universität Dortmund, Computer Graphics Group, 18.03.2014. (second reviewer).
- [12] B. Langmann. *Wide Area 2D/3D Imaging: Development, Analysis and Applications*. PhD thesis, University of Siegen, Research Training Group GRK 1564, 30.10.2013. (second reviewer).
- [13] B. Labitzke. *Visualization and Analysis of Multispectral Image Data*. PhD thesis, University of Siegen, Research Training Group GRK 1564, 28.10.2013. (second reviewer: Prof. Dr. V. Blanz, University of Siegen, Germany).
- [14] O. Schwaneberg. *Concept, System Design, Evaluation and Safety Requirements for a Multispectral Sensor*. PhD thesis, University of Siegen, Research Training Group GRK 1564, 26.09.2013. (second reviewer: Prof. Dr. P. Haring-Bolívar, University of Siegen, Germany).

- [15] B. Drayton. *Algorithm and design improvements for indirect time of flight range imaging cameras*. PhD thesis, Victoria University of Wellington, NZ, 12.07.2013. (second reviewer).
- [16] U. Hahne. *Real-time depth imaging*. PhD thesis, TU Berlin, Computer Graphics Group, 03.05.2012. (second reviewer).
- [17] R. Fraedrich. *Interactive Visualization Techniques for Large-Scale Particle Simulations*. PhD thesis, TU München, Computer Graphics and Visualization Group, 10.04.2012. (second reviewer).
- [18] M. Droste. *Customizable Visualization in the Context of Metabolic Networks*. PhD thesis, Forschungszentrum Jülich, Systems Biotechnology Group, 02.12.2011. (second reviewer).
- [19] M. Lambers. *Interaktive Visualisierung und Exploration von SAR-Daten*. PhD thesis, University of Siegen, Computer Graphics Group, 01.07.2011. (second reviewer: Dr. habil. Karol Myszkowski, MPI Saarbrücken, Germany).
- [20] I. Schiller. *Dynamic 3D Scene Analysis and Modeling with a Time-of-Flight Camera*. PhD thesis, University of Kiel, Institute of Computer Science, 17.05.2011. (second reviewer).
- [21] I. Chiosa. *Efficient and High Quality Clustering*. PhD thesis, University of Siegen, Computer Graphics Group, 25.10.2010. (second reviewer: Prof. Dr. Mario Botsch, University of Bielefeld, Germany).
- [22] M. Lindner. *Calibration and Realtime Processing of Time-of-Flight Range Data*. PhD thesis, University of Siegen, Computer Graphics Group, 15.10.2010. (second reviewer: Prof. Dr. Reinhard Koch, University of Kiel, Germany).
- [23] M. Böhme. *Tracking Gaze and Human Activity*. PhD thesis, University of Lübeck, Inst. for Neuro- and Bioinformatics, 2010. (Tertiary Reviewer).
- [24] M. Winter. *Image-based incremental reconstruction, rendering and augmented visualization of Surfaces for endoscopic surgery*. PhD thesis, University of Erlangen, Department of Computer Science, 2010. (second reviewer).
- [25] C. Rezk-Salama. *Real-time volume visualization*. Habilitation at the University of Siegen, 2009.
- [26] N. Cuntz. *Real-time particle systems*. PhD thesis, University of Siegen, Computer Graphics Group, 2009. (second reviewer: Prof. Dr. Daniel Weiskopf, University of Stuttgart, Germany).
- [27] S. Todt. *Real-Time Rendering and Akquisition of spherical light fields*. PhD thesis, University of Siegen, Computer Graphics Group, 2009. (second reviewer: Prof. Dr. Günther Greiner, University of Erlangen, Germany).
- [28] J.-F. Evers-Senne. *Plenoptic Modelling and Rendering of Complex Rigid Scenes*. PhD thesis, University of Kiel, Institute of Computer Science, 2008. (second reviewer).
- [29] R. Reichard. *Ereignisorientierte Simulation einer Hochenergie-Kugelmühle*. PhD thesis, University of Siegen, Inst. for Simulation Technology, 2005. (second reviewer).
- [30] M. Groß. *Entwicklung eines Softwaresystems zur universellen Planung chirurgischer Eingriffe in 2D- und 3D Modalitäten*. PhD thesis, University of Siegen, Inst. for Automatic Control Engineering, 2004. (second reviewer).

Publications

An overview of my publications can be found on Google Scholar, Scopus and ResearchID.

Peer Reviewed Journal Publications

- [1] M. Zollhöfer, P. Stotko, A. Görlitz, C. Theobalt, M. Nießner, R. Klein, and Kolb. A. State of the art on 3D reconstruction with RGB-D cameras. In *J. Computer Graphics Forum (Proc. Eurographics)(STAR)*, 2018. accepted for publication.
- [2] D. Presnov, M. Lambers, and A. Kolb. Robust camera pose estimation for mobile online scene reconstruction. *IEEE Sensors*, 2018. DOI 10.1109/JSEN.2018.2801878.
- [3] D. Bulczak, M. Lambers, and A. Kolb. Quantified, interactive simulation of AMCW ToF camera including multipath effects. *Sensors*, 18(1):13, 2018.
- [4] T. Geisler and A. Kolb. Pattern recognition of rough surfaces by using goniometric scattered light. *Metrology and Measurement Systems*, 2018. accepted for publication.
- [5] R. Winchenbach, H. Hochstetter, and A. Kolb. Infinite continuous adaptivity for incompressible SPH. In *ACM Trans. Graph. (Proc. SIGGRAPH)*, volume 36, pages 102:1–102:10, 2017.
- [6] D. Lefloch, M. Kluge, H. Sarbolandi, T. Weyrich, and A. Kolb. Comprehensive use of curvature for robust and accurate online surface reconstruction. *IEEE Trans. Pattern Anal. and Mach. Intell.*, 39(12):2349–2365, 2017.
- [7] F. Alghabi, S. Send, U. Schipper, A. Abboud, U. Pietsch, and Kolb. A. Fast gpu-based absolute intensity determination for energy-dispersive X-ray laue diffraction. *J. of Instrumentation*, 11(01):T01001, 2016.
- [8] H. Steiner, S. Sporrer, A. Kolb, and N. Jung. Design of an active multispectral SWIR camera system for skin detection and face verification. *Journal of Sensors, Special Issue zu Multispectral, Hyperspectral, and Polarimetric Imaging Technology*, 501, 2016. Article ID: 9682453; DOI: 10.1155/2016/9682453.
- [9] H. Sarbolandi, D. Lefloch, and A. Kolb. Kinect range sensing: Structured-light versus time-of-flight kinect. *J. Computer Vision and Image Understanding*, 13:1–20, 2015. DOI:10.1016/j.cviu.2015.05.006.
- [10] M. Lambers, S. Hoberg, and A. Kolb. Simulation of time-of-flight sensors for evaluation of chip layout variants. *IEEE Sensors Journal*, 15(7):4019–4026, 2015. DOI: 10.1109/JSEN.2015.2409816.
- [11] F. Alghabi, S. Send, U. Schipper, A. Abboud, N. Pashniak, U. Pietsch, and Kolb. A. Fast GPU-based spot extraction for energy-dispersive X-ray laue diffraction. *J. of Instrumentation*, 9(11):T11003, 2014.
- [12] Felix Heide, Lei Xiao, Andreas Kolb, Matthias Hullin, and Wolfgang Heidrich. Imaging in scattering media using correlation image sensors and sparse convolutional coding. *Optics Express*, 22(21):26338–26350, 2014.
- [13] D. Zukić, A. Vlasák, J. Egger, D. Hořínek, C. Nimsky, and A. Kolb. Robust detection and segmentation for diagnosis of vertebral diseases using routine MR images. *J. Computer Graphics Forum(Invited Paper)*, 33(6):190–204, 2014.

- [14] M. Pätzold, M. Kahl, T. Klinkert, A. Keil, T. Löffler, P. Haring Bolívar, and A. Kolb. Framework for hybrid synthetic aperture THz systems including simulation of thz-scattering. *IEEE Trans. Terahertz Science & Technology*, 3(5):625–634, 2013.
- [15] J. Bader, M. Pätzold, and A. Kolb. Constraint up-scaling for direct and global image components. *Journal of the WSCG*, 21(1):69–78, 2013.
- [16] T. Hoegg, D. Lefloch, and A. Kolb. Time-of-flight camera based 3d point cloud reconstruction of a car. *J. Computers in Industry*, 64(9):1099–1114, 2013.
- [17] L. Maier-Hein, P. Mountney, A. Bartoli, H. Elhawary, D. Elson, A. Groch, A. Kolb, M. Rodrigues, J. Sorger, S. Speidel, and D. Stoyanov. Optical techniques for 3D surface reconstruction in computer-assisted laparoscopic surgery. *Medical Image Analysis*, 17(8):974–996, 2013.
- [18] F. Heide, M. Rouf, M. Hullin, B. Labitzke, W. Heidrich, and A. Kolb. High-quality computational imaging through simple lenses. *ACM Trans. Graph. (presented at SIGGRAPH 2013)*, 32(5):149:1–149:14, 2013.
- [19] J. Egger, D. Zukić, B. Freisleben, A. Kolb, and C. Nimsky. Segmentation of pituitary adenoma: A graph-based method vs. a balloon inflation method. *J. Computer Methods and Programs in Biomedicine*, 110(3):268–278, 2013.
- [20] O. Schwaneberg, U. Köckemann, H. Steiner, S. Sporrer, A. Kolb, and N. Jung. Material classification through distance aware multispectral data fusion. *Measurement Science and Technology*, 24(4):045001, 2013.
- [21] J. Orthmann and A. Kolb. Temporal blending for adaptive SPH. *J. Computer Graphics Forum (presented at EUROGRAPHCS 2013)*, 31(8):2436–2449, 2012.
- [22] B. Labitzke, S. Bayraktar, and A. Kolb. Generic visual analysis for multi- and hyperspectral image data. *J. Data Mining and Knowledge Discovery - Special issue on Intelligent Interactive Data Visualization*, pages 117–145, 2012.
- [23] I. Chiosa and A. Kolb. GPU-based multilevel clustering. *IEEE Trans. on Visualization and Computer Graphics*, 17(2):132–145, 2011.
- [24] M. Lambers and A. Kolb. Dynamic terrain rendering. *J. 3D Research*, 1(4):1–8, 2010.
- [25] M. Lindner, I. Schiller, A. Kolb, and R. Koch. Time-of-flight sensor calibration for accurate range sensing. *J. Computer Vision and Image Understanding*, 114(12):1318–1328, 2010.
- [26] A. Kolb, E. Barth, R. Koch, and R. Larsen. Time-of-flight cameras in computer graphics. *J. Computer Graphics Forum*, 29(1):141–159, 2010.
- [27] N. Cuntz, A. Pritzkau, and A. Kolb. Time-adaptive lines for the interactive visualization of unsteady flow data sets. *J. Computer Graphics Forum*, 28(8):2165–2175, 2009.
- [28] J. Orthmann, C. Rezk-Salama, and A. Kolb. GPU-based responsive grass. In *Journal of WSCG*, volume 17, pages 65–72, 2009.
- [29] M. Keller and A. Kolb. Real-time simulation of time-of-flight sensors. *J. Simulation Practice and Theory*, 17:967–978, 2009.
- [30] S. Todt, M. Langer, C. Rezk-Salama, A. Kolb, and K. Kuhnert. Spherical light field rendering in application for analysis by synthesis. *Int. J. on Intell. Systems and Techn. and App., Special Issue on Dynamic 3D Imaging*, 5(3/4):304 – 314, 2008.

- [31] M. Lindner, M. Lambers, and A. Kolb. Sub-pixel data fusion and edge-enhanced distance refinement for 2D/3D images. *Int. J. on Intell. Systems and Techn. and App., Special Issue on Dynamic 3D Imaging*, 5(3/4):344 – 354, 2008.
- [32] S. Todt, C. Rezk-Salama, A. Kolb, and K.-D. Kuhnert. GPU-based spherical light field rendering with per-fragment depth correction. *J. Computer Graphics Forum*, 27(8):2081–2095, 2008.
- [33] N. Cuntz, D. Weiskopf, R. Strzodka, and A. Kolb. Particle level set advection for the interactive visualization of unsteady 3D flow. *J. Computer Graphics Forum (Proc. EuroVis)*, 27(3):719–726, 2008.
- [34] M. Lambers, H. Nies, and A. Kolb. Interactive dynamic range reduction for SAR images. *Geoscience and Remote Sensing Letters (GRSL)*, 5(3):507–511, 2008.
- [35] C. Rezk-Salama, S. Todt, and A. Kolb. Raycasting of light field galleries from volumetric data. *J. Computer Graphics Forum (Proc. EuroVis)*, 27(3):839–846, 2008.
- [36] C. Rezk-Salama and A. Kolb. Opacity peeling for direct volume rendering. In *J. Computer Graphics Forum (Proc. Eurographics)*, volume 25, pages 597–606, 2006.
- [37] R. Strzodka, M. Doggett, and A. Kolb. Scientific computation for simulations on programmable graphics hardware. *J. Simulation Practice & Theory*, 13(8):667–680, 2005.
- [38] L. Latta and A. Kolb. Homomorphic factorization of BRDF-based lighting computation. *ACM Trans. Graph. (Proc. SIGGRAPH)*, 21(3):509–516, 2002.
- [39] G. Greiner, A. Kolb, and A. Riepl. Scattered data interpolation using data-dependent optimization techniques. *Graphical Models*, 64:1–18, 2002.
- [40] A. Kolb, H. Pottmann, and H.-P. Seidel. Fair surface reconstruction using quadratic functionals. In *J. Computer Graphics Forum (Proc. Eurographics) '95*, volume 14, pages 469–479. Eurographics, Blackwell Publishers, 1995.
- [41] G. Greiner, A. Kolb, R. Pfeifle, H.-P. Seidel, M. Encarnaç o, and R. Klein. A platform for visualizing curves and surfaces. *Computer Aided Design*, 27:7:559–566, 1995.
- [42] A. Kolb and H.-P. Seidel. Interpolating scattered data with C^2 surfaces. *Computer Aided Design*, 27:4:277–282, 1995.

Edited Books

- [1] M. Grzegorzec, C. Theobalt, R. Koch, and A. Kolb, editors. *Time-of-Flight and Depth Imaging. Sensors, Algorithms, and Applications*, volume 8200 of *LNCS*. Springer, 2013.
- [2] R. Larsen, E. Barth, and A. Kolb, editors. *Computer Vision and Image Understanding, Special issue on Time-of-Flight Camera Based Computer Vision*, volume 114. Elsevier, 2010.
- [3] R. Koch, A. Kolb, and C. Rezk-Salama, editors. *Proc. Vision, Modeling & Visualization (VMV)*. Eurographics Association, 2010.
- [4] A. Kolb and R. Koch, editors. *Proc. DAGM Workshop Dynamic 3D Imaging*, volume 5742 of *LNCS*. Springer, 2009.
- [5] K.-D. Kuhnert and A. Kolb, editors. *Int. J. Intelligent Systems Technologies & Applications, Special Issue: Int. Workshop Dynamic 3D Imaging*, volume 5. Inderscience, 2008.
- [6] A. Kolb, editor. *Simulation Modelling Practice and Theory (SIMPAT), special issue on programmable graphics hardware*, volume 13. Elsevier, 2005.

Book Chapters

- [1] A. Kolb, J. Zhu, and R. Yang. *Digital Representations of the Real World: How to Capture, Model, and Render Visual Reality*, chapter Sensor fusion, pages 133–150. AK Peters / CRC Press, 2015.
- [2] A. Kolb and F. Pece. *Digital Representations of the Real World: How to Capture, Model, and Render Visual Reality*, chapter Range Imaging, pages 51–64. AK Peters / CRC Press, 2015.
- [3] D. Lefloch, R. Nair, F. Lenzen, H. Schäfer, L. Streeter, M. Cree, R. Koch, and A. Kolb. *Time-of-Flight and Depth Imaging*, volume 8200 of *LNCS*, chapter Technical Foundation and Calibration Methods for Time-of-Flight Cameras, pages 3–24. Springer, 2013.
- [4] R. Nair, S. Meister, M. Lambers, M. Balda, H. Hoffmann, A. Kolb, D. Kondermann, and B. Jähne. *Time-of-Flight and Depth Imaging*, volume 8200 of *LNCS*, chapter Ground Truth for Evaluating Time of Flight Imaging, pages 52–74. Springer, 2013.
- [5] J. Bader, B. Labitzke, M. Grzegorzec, and A. Kolb. *BIOMETRICS*, chapter Multispectral Pattern Recognition Techniques for Biometrics, pages 87–116. Centrum Inżynierii Biomedycznej Gliwice, 2011.
- [6] D. Zukić, C. Rezk-Salama, and Andreas Kolb. *Studies in Computational Intelligence*, volume 240, chapter Classifying Volume Datasets Based on Intensities and Geometric Features, pages 63–85. Springer, 2009.
- [7] S. Todt, C. Rezk-Salama, and A. Kolb. *Virtuelle Welten als Basistechnologie für Kunst und Kultur*, chapter Virtuelle Rekonstruktion und Interaktive Exploration der Schlossanlage Dillenburg, pages 119–138. transcript Verlag, 2009.
- [8] A. Kolb, R. Leschke, and T. Reinhard. *Navigationen – Special Issue: Interaktionen*, chapter Interaktion – Ein Begriff zwischen den Wissenschaften, pages 81–102. Transkript Verlag, 2008.
- [9] K. Kuhnert, M. Langer, M. Stommel, and A. Kolb. *Vision Systems*, chapter Dynamic 3D Vision, pages 311–334. Advanced Robotic Systems, Vienna, 2007.
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