

Scientific and Teaching Activities

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Edited Books and Journals, Book Chapters:

- [1] Werner Purgathofer, Eduard Gröller, Graphische Datenverarbeitung, In Peter Rechenberg, Gustav Pomberger, Handbuch der Informatik. Carl Hanser Verlag, first to third edition, pp. 807-854, 2002.
- [2] Eduard Gröller, Helwig Löffelmann, William Ribarsky (eds.), Data Visualization '99, Springer 1999.
- [3] Eduard Gröller, Helwig Hauser, William Ribarsky (eds.), Guest editors of the special issue "Data Visualization" of the Journal Computers&Graphics (C&G, vol. 24, no. 3, June 2000).
- [4] Eduard Gröller, Kwan-Liu Ma, Klaus Mueller (eds.), Guest editors of the Special Section on IEEE Visualization Applications, IEEE Transactions on Visualization and Computer Graphics, 11(5), September/October 2005.
- [5] Eduard Gröller, Issei Fujishiro, Klaus Mueller, Thomas Ertl (eds.), Volume Graphics 2005, Fourth International Workshop on Volume Graphics, Eurographics / IEEE VGTC Workshop Proceedings, 2005.
- [6] Cláudio T. Silva, Eduard Gröller, Holly Rushmeier (eds.), IEEE Visualization 2005 proceedings, IEEE Computer Society, 2005.
- [7] Eduard Gröller, László Szirmay-Kalos (eds.), Guest editors of the Eurographics 2006 proceedings, Computer Graphics Forum, 25(3), 2006.
- [8] Eduard Gröller, Cláudio T. Silva, Alex Pang (eds.), Guest editors of the IEEE Visualization 2006 proceedings, IEEE Transactions on Visualization and Computer Graphics, 12(5) 2006.

Reviewed and Invited Conference Papers, Journal Publications:

- [1] Purgathofer, W., Gröller, E.: Using tetrahedrons for dithering color pictures. Proceedings of 3rd International Conference on Computer Graphics, 22.-24. June 1988, Dubrovnik, Yugoslavia.
- [2] Gröller, E.: Fractal Geometry and Computer Graphics. Proceedings of 7th Spring School on Computer Graphics, 20.-23. May 1991, Bratislava, CSFR.
- [3] Gröller, E., Purgathofer, W.: Using temporal and spatial coherence for accelerating the calculation of animation sequences. Proceedings of EUROGRAPHICS'91, Elsevier Science Publishers, September 1991, pp. 103-113.

- [4] Gröller, E.: Fractals and Solid Modeling. *Computer Graphics Forum* 11(3), 1992, pp. C-415-C-424.
- [5] Gröller, E., Stocker, W.: ACC - lossless data compression of animation sequences. *Proceedings of ICCG 93 (International Conference on Computer Graphics), Graphics, Design and Visualization* (ed: Mudur, Pattanaik), 22.2.-26.2.1993, Bombay, India. Republished in *IFIP Transactions B-9, Graphics, Design and Visualization*, North Holland, 1993, pp. 75-88.
- [6] Gröller, E., Purgathofer, W.: Efficiency in Computer Graphics: The coherence principle. *Proceedings of the International Conference on Computer Graphics 93*, 2.-4. June 1993, Budmerice, Slovakia.
- [7] Gröller, E.: Oct-tracing animation sequences. *Proceedings of the International Conference on Computer Graphics 93*, 2.-4. June 1993, Budmerice, Slovakia.
- [8] Gröller, E.: Chaostheorie und Computergraphik. *Proceedings of the conference Chaos und Strukturbildung (3. Jahrestagung of the Chaos Gruppe)*, 13. November 1993, Series 'Faktum der TU München', Germany, pp. 73-85.
- [9] Gröller, E., Brunner, P.: Coherence in scan-line algorithms for CSG. *Proceedings of the Winter School of Computer Graphics and CAD Systems 94*, 19.-20. January 1994, Plzen, Czech Republic.
- [10] Gröller, E.: Modeling and Rendering of Nonlinear Iterated Function Systems. *Computers & Graphics*, Vol. 18(5), 1994, pp. 739-748. Republished in C. A. Pickover (ed.) *Chaos and Fractals: A Computer Graphical Journey, A 10 Year Compilation of Advanced Research*, Elsevier, August 1998.
- [11] Gröller, E.: Application of Visualization Techniques to Complex and Chaotic Dynamical Systems. *Proceedings of 5th EUROGRAPHICS Workshop on Visualization in Scientific Computing*, 30. May - 1. June 1994, Rostock, Germany (32 out of 50 accepted). Revised Version published in M. Göbel, H. Müller, B. Urban (eds.) *Visualization in Scientific Computing*, Springer 1995, pp. 63-71 (19 out of 32 accepted).
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- [13] Jankovic, V., Gröller, E.: Physically Based Matching of Multimodal Medical Information. *Proceedings of the 10th Spring School on Computer Graphics '94 and its Applications*, 6.-9. June 1994, Bratislava, Slovakia.
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- [16] Gröller, E.: Interactive Exploration of Dynamical Systems. *Proceedings of Visual Data Exploration and Analysis II*, In *IS&T/SPIE Proceedings Vol. 2410*, February 1995, San Jose, USA, pp. 132 - 138.
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- [200] Sörös, G., Seichter, H., Rautek, P., Gröller, E.: Augmented Visualization with Natural Feature Tracking. In *Proceedings of 10th International Conference on Mobile and Ubiquitous Multimedia (MUM2011)*, Dec 7-9th 2011, Beijing, China, , pp ???–???
- [201] Gerl, M., Rautek, P., Isenberg, T., Gröller, E.: Semantics by Analogy for Illustrative Volume Visualization. *Computers & Graphics*, Vol. 35(??), 201?, pp ???–???

Other Publications, Papers and Reports:

- [1] Gröller, E.: Optimale Farbauswahl bei Ausgabegeräten in der Graphischen Datenverarbeitung. Diploma thesis at the Institut für Praktische Informatik, Vienna University of Technology, September 1987, Vienna.
- [2] Gröller, E.: Duale Voronoizerlegung im R^3 mit Simplexmethode. *CAD&Computergraphik* 11(1), April 1988.

- [3] Gröller, E.: Coherence in Computer Graphics. Dissertation at the Institute of Computer Graphics, TU Wien, September 1992. Published in the series "Dissertationen der TU Wien" of the Verband der wissenschaftlichen Gesellschaften Österreichs, 1993.
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- [14] König, A., Gröller, E.: 3D Medical Visualization: Breaking the Limits of Diagnostics and Treatment. ERCIM News No. 44, January 2001, pp. 27-28.
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- [27] Rautek, P., Reiterer, A., Gröller, E.: Caricaturistic Visualization of Deformation Data based on High Density Point Clouds. Poster at the 8th conference on Optical 3-D Measurement Techniques, 2007.
- [28] Termeer, M., Bescós, J.O., Breeuwer, M., Vilanova, A., Gerritsen, F., Gröller, E.: The Volumetric Bull's Eye Plot. Poster at the 11th Annual SCMR (Society for Cardiovascular Magnetic Resonance) Scientific Sessions, Los Angeles, USA, Jan 31 - Feb 3, 2008.
- [29] Heinzl, Ch., Kastner, J., Gröller, E.: Geometriebestimmung von Multimaterialbauteilen und reproduzierbare Oberflächenextraktion. *Proceedings Industrielle Computertomografietagung*, Wels, Austria, Feb 26-27, 2008, pp 151-156.
- [30] Muigg, Ph., Doleisch, H., Hadwiger, M., Gröller, E.: Novel Volume-Visualization Methods for the Interactive Rendering of CFD Simulation Data. *NAFEMS 5th Anniversary CFD Seminar („Simulation komplexer Strömungsvorgänge“)*, Wiesbaden, Germany, Mar 10 - 11, 2008.

- [31] Rautek, P., Bruckner, St., Gröller, E., Viola, I.: Illustrative Visualization – New Technology or Useless Tautology? ACM SIGGRAPH Computer Graphics Quarterly, Volume 42, Number 3, 2008.
- [32] Patel, D., Giertsen, Ch., Thurmond, J., Gjelberg, J., Gröller, E.: Knowledge assisted visualization of seismic data (Abstract). Workshop Knowledge-assisted Visualization, Oct 19, 2008, (KAV 08).
- [33] Termeer, M., Oliván Bescós, J., Breeuwer, M., Vilanova, A., Gerritsen, F., E. Gröller, E., Nagel, E.: Patient-Specific Coronary Artery Supply Territory AHA Diagrams. Poster at the 12th Annual SCMR (Society for Cardiovascular Magnetic Resonance) Scientific Sessions, Orlando, USA, Jan 29 - Feb 1, 2009.
- [34] Reiterer, A., Rautek, P., Gröller, E.: A Novel Method for the Visualization of Deformation Data. XXIV FIG International Congress 2010, Facing the Challenges – Building the Capacity, Sydney, Australia, Apr 11-16, 2010.
- [35] Ebert, D., Gröller, E., Hagen, H., Kaufman A.: 09251 Abstracts Collection, Scientific Visualization, Dagstuhl Seminar, Dagstuhl Seminar Proceedings, ISSN 1862-4405.
- [36] van Pelt, R., Gröller, E., ter Haar Romenij, B., Vilanova, A.: Illustrative Particle Visualization of 4D MRI Blood-Flow Data. Poster at EuroVis 2011, the Eurographics / IEEE Symposium on Visualization, May 31–June 3, Bergen, Norway.

Patents:

- [1] Kanitsar, A., Mroz, L., Wegenkittl, R., Kohlmann, P., Bruckner, St., Gröller, E.: Method and apparatus for volume rendering of medical data sets. European Patent EP 2 048 621 filed 2007-10-09, granted 2010-05-26, United States Patent Application US12/134615 filed 2008-06-06, International Patent Application PCT/EP2008/063526 filed 2008-10-09. Agfa HealthCare, 2010
- [2] Kanitsar, A., Haidacher, M., Bruckner, St., Gröller E.: Method and apparatus for multimodal visualization of volume data sets. European Patent Application EP08160164.3 filed 2008-07-11, International Patent Application PCT/EP2009/057664 filed 2009-06-19.
- [3] Kanitsar, A., Mroz, L., Wegenkittl, R., Kohlmann, P., Bruckner, St., Gröller, E.: Method and apparatus for determining a position in an image, in particular a medical image. European Patent EP 2 192 553, filed 2008-11-28, granted 2011-10-19, United States Patent Application US12/625771 filed 2009-11-25.

Talks:

- [1] Dithern mit Tetraedern im RGB-Raum, invited talk of OCG and ACGA, Vienna University of Technology, Austria, June 15th, 1988.
- [2] Using tetrahedrons for dithering color pictures, 3rd International Conference on Computer Graphics, Dubrovnik, Yugoslavia, June 22nd-24th, 1988.
- [3] Fractal Geometry and Computer Graphics, 7th Spring School on Computer Graphics, Bratislava, CSFR, May 22nd, 1991.

- [4] Using temporal and spatial coherence for accelerating the calculation of animation sequences, EUROGRAPHICS'91, Vienna, Austria, September 4th, 1991.
- [5] Fraktale in der Lehre, 1st Workshop of the "Fractal-Chaos User Gruppe", Vienna, Austria, March 18th, 1992.
- [6] Fractals in the classroom, Comenius Universität Bratislava, Slovakia, May 29th, 1992.
- [7] Fractals and Solid Modeling, EUROGRAPHICS'92, Cambridge, UK, September 11th, 1992.
- [8] Visualisierung nichtlinearer dynamischer Systeme, Kolloquium im Rahmen des SFB "Nichtlineare dynamische Systeme", Vienna University of Technology, Vienna, Austria, November 6th, 1992.
- [9] ACC-lossless data compression of animation sequences, ICCG 93 (International Conference on Computer Graphics) Bombay, India, February 24th, 1993.
- [10] Grundlagen der Computergrafik, Seminar Grafik, organized by Pädagogisches Institut des Bundes in Wien and OCG (Österreichischen Computergesellschaft), Vienna, Austria, April 19th, 1993.
- [11] Fraktale Geometrie, Seminar Grafik, organized by Pädagogisches Institut des Bundes in Wien and OCG (Österreichischen Computergesellschaft), Vienna, Austria, April 19th, 1993.
- [12] Datenkompression und Dateiformate, Seminar Grafik, organized by Pädagogisches Institut des Bundes in Wien and OCG (Österreichischen Computergesellschaft), Vienna, Austria, April 20th, 1993.
- [13] A distortion camera for ray tracing, Visualization and Intelligent Design in Engineering and Architecture, Southampton, UK, April 28th, 1993.
- [14] Oct-tracing animation sequences, International Conference on Computer Graphics 93, Budmerice, Slovakia, June 3rd, 1993.
- [15] Chaos und Computergraphik, Chaos und Strukturbildung (3. Jahrestagung der Chaos Gruppe), München, Germany, November 13th 1993.
- [16] Exploitation of Coherence Properties in Computer Graphics, Czech Technical University (CTU), Prague, Czech Republic, November 19th, 1993.
- [17] Techniken der Computergraphik zur Analyse dynamischer Systeme, invited talk at a "Konversatorium aus Operations Research", Vienna University of Technology, Austria, January 17th, 1994.
- [18] Coherence in scan-line algorithms for CSG, Winter School on Computer Graphics 94, Plzen, Czech Republic, January 19th, 1994.
- [19] Application of Visualization Techniques to Complex and Chaotic Dynamical Systems, 5th EUROGRAPHICS Workshop on Visualization in Scientific Computing, Rostock, Germany, June 1st, 1994.
- [20] Interactive Transformation of 2D Vector Data, 10. Spring School on Computer Graphics '94 and its Applications, Bratislava, Slovakia, June 8th, 1994.
- [21] Hyperrealistic Image Synthesis and Manipulation, Symposium "The end of reality?", Bratislava, Slovakia, November 3rd, 1994.

- [22] Visualization Techniques for Complex and Chaotic Dynamical Systems, talk as part of the Lecture Series on "Scientific Visualization" of the Department of Computer Science, CTU FEL, Technical University Prague, Czech Republic, November 28th, 1994.
- [23] Interactive Exploration of Dynamical Systems, IS&T/SPIE's Symposium on Electronic Imaging: Science & Technology, San Jose Convention Center, USA, February 8th, 1995.
- [24] Visualisierung komplexer dynamischer Systeme, WSI/GRIS, University of Tübingen, Tübingen, Germany, March 8th, 1995.
- [25] Visualisierung dynamischer Systeme unter Berücksichtigung lokaler Eigenschaften, invited talk at a "Konversatorium aus Operations Research", Vienna University of Technology, Austria, March 24th, 1995.
- [26] Visualisierung für das lokale und globale Verhalten komplexer dynamischer Systeme, Workshop on Visualisierung on "Ergodentheorie, Analysis und effiziente Simulation dynamischer Systeme", Feldberg, Germany, October 5th, 1995.
- [27] Analysis and Visualization of Nonlinear Time Sequences, 7th EUROGRAPHICS Workshop on Visualization in Scientific Computing, Prague, Czech Republic, April 24th, 1996.
- [28] Case Studies of Visualizing Analytically defined Dynamical Systems, Participant Talk at the International Summer School on Scientific and Mathematical Visualization, Ettenheim, Germany, September, 24th, 1996.
- [29] Advanced Visualization Techniques for Dynamical Systems, invited lecture at the Department of Information Technology and Computer Science, University of West Bohemia, Plzen, Czech Republic, October, 21st, 1996.
- [30] Visualisierung Dynamischer Systeme, Informatik-Kolloquium "Fortschritte in der Computer Graphik", Institut für Informatik, Technische Universität Braunschweig, Germany, October 22nd, 1996.
- [31] Visualisierung Nichtlinearer Dynamischer Systeme, Habilitationskolloquium, Vienna University of Technology, Austria, November 7th, 1996.
- [32] Ausgewählte Verfahren zur Visualisierung dynamischer Systeme, TH Informatik-Kolloquium, Technische Hochschule Darmstadt, Germany, January 30th, 1997.
- [33] Animating Flow Fields: Rendering of Oriented Line Integral Convolution, Computer Animation'97, Geneva, Switzerland, June, 5th, 1997.
- [34] Various Techniques for the Visualization of Dynamical Systems, Seminar 9724, Scientific Visualization, Dagstuhl, Germany, June 13th, 1997.
- [35] Anwendungen wissenschaftlicher Visualisierung, Institut für angewandte Physik, Leopold Franzens-Universität, Innsbruck, Austria, July 2nd, 1997.
- [36] Verfahren zur Visualisierung dynamischer Systeme, Fakultät für Informatik, Technische Universität Chemnitz-Zwickau, Germany, July 10th, 1997.
- [37] Visualizing the Behavior of Higher Dimensional Dynamical Systems, IEEE Visualization'97, Phoenix, AZ, USA, October 22nd, 1997.
- [38] Visualisierung am Institut für Computergraphik der TU-Wien, Fakultät für Mathematik und Informatik, Universität Passau, Germany, December 8th, 1997.
- [39] Visualisierung am Institut für Computergraphik der TU-Wien, Fakultät für Informatik, Otto-von-Guericke Universität Magdeburg, Germany, December 18th, 1997.

- [40] Aktuelle Visualisierungsprojekte am Institut für Computergraphik der TU-Wien, Fakultät für Informatik, WSI/GRIS, University of Tübingen, Germany, December 19th, 1997.
- [41] Visualisierung des Verhaltens höherdimensionaler dynamischer Systeme. Konrad-Zuse-Zentrum für Informationstechnik Berlin und TU Berlin, Germany, February 6th, 1998.
- [42] Enhancing the Visualization of Characteristic Structures in Dynamical Systems, 9th EUROGRAPHICS Workshop on Visualization in Scientific Computing, Blaubeuren, Germany, April 20th 1998.
- [43] Selected Trends in Scientific Visualization. Invited talk at Spring Conference on Computer Graphics 1998 (SCCG'98), Budmerice, Slovakia, April 24th, 1998.
- [44] TunVis: Visualizing specific geologic features for tunnel planning and construction, Spring Conference on Computer Graphics 1998 (SCCG'98), Budmerice, Slovakia, April 25th, 1998.
- [45] Neuere Visualisierungsprojekte am Institut für Computergraphik der TU Wien, Department of Computer Science, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, June, 22nd, 1998.
- [46] Interactive Visualization Applications, Faculty of Informatics, Masaryk University Brno, Czech Republic, March, 9th, 1999.
- [47] Interaktive Visualisierungsanwendungen, Colloquia on Interactive Systems, University Klagenfurt, Austria, April 9th, 1999.
- [48] Anwendungsbeispiele der Computergraphik in der Visualisierung, Kolloquium Informatik, University Bonn, Germany, May 5th, 1999.
- [49] Einsatz von graphischer Datenverarbeitung in der Visualisierung, IMMD, University Erlangen-Nuernberg, Germany, November 5th, 1999 .
- [50] Computergraphikanwendungen, Fakultät für Informatik, University of Ulm, Germany, December 17th, 1999.
- [51] Color-Table Animation of Fast Oriented Line Integral Convolution for Vector Field Visualization, WSCG'2000, the 8-th International Conference in Central Europe on Computer Graphics, Visualization and Interactive Digital Media'2000, Plzen, Czech Republic, Februar 8th, 2000.
- [52] Anwendungen der wissenschaftlichen Visualisierung, Johannes Kepler Universität Linz, Austria, March 17th, 2000.
- [53] Interactive 3D Graphics in Medicine, Seminar 00251, Image Synthesis and Interactive 3D Graphics, Dagstuhl, Germany, June 22nd, 2000.
- [54] Anwendungsbeispiele der Computergraphik, Informatikkolloquium, Universität Gesamthochschule Siegen, Germany, September 20th, 2000.
- [55] Beispiele aus der medizinischen Visualisierung, Otto-von-Guericke Universität Magdeburg, Germany, October 19th, 2000.
- [56] Visualisierungsprojekte am ICGA der TU-Wien, MeVis, Universität Bremen, Germany, January 29th, 2001.
- [57] Ausgewählte Kapitel der medizinischen Visualisierung, MeVis, Universität Bremen, Germany, January 30th, 2001.

- [58] Anwendungsbeispiele in der wissenschaftlichen Visualisierung, Institut für Informatik, TU München, Germany, March 9th, 2001.
- [59] Issues in Building a Medical Workstation, University of Gävle, Sweden, March, 21st, 2001.
- [60] Insight into Data Through Visualization, Invited talk at Graph Drawing 2001, Vienna, Austria, September, 26th, 2001.
- [61] Anwendungsbeispiele medizinischer Visualisierung, Fachbereich Informatik, Universität Kaiserslautern, Germany, October, 10th, 2002.
- [62] Wissenschaftliche Visualisierung in der Medizin, Arbeitsgruppe „Computergraphik“, Universität Bonn, Germany, November, 25th, 2002.
- [63] Medical Visualization: CT Angiography and other Examples, Philips Medical Systems (PMS), Eindhoven, Netherlands, November, 27th, 2002.
- [64] Medical Visualization: CT Angiography and other Examples, TU/e, Technical University Eindhoven, Netherlands, November, 28th, 2002.
- [65] Medizinische Visualisierung: CT Angiographie und weitere Beispiele, WSI/GRIS, Universität Tübingen, Germany, January, 31st, 2003.
- [66] Scientific Visualization in Medicine (or a Christmas-Tree in Heaven), Invited Talk at Central European Seminar on Computer Graphics (CESCG 2003), Budmerice, Slovakia, April, 24th, 2003.
- [67] Feature Extraction in Medical Visualization, Seminar 03231, Scientific Visualization: Extracting Information and Knowledge from Scientific Data Sets, Dagstuhl, Germany, June, 2nd, 2003.
- [68] Volumetric Feature Extraction in Medical Visualization, Stanford University School of Medicine, Radiological Sciences Laboratory, Stanford, USA, October, 27th, 2003.
- [69] Efficient Volume Visualization of Large Medical Datasets, VRVis Center for Virtual Reality and Visualization, VRVis Forum #16, Vienna, Austria, September 23rd, 2004.
- [70] Scientific Visualization Techniques and Applications, University of Arkansas Little Rock (UALR), Cyber College/CSAM Colloquium Series, Little Rock, USA, October 15th, 2004.
- [71] Importance-Driven Image Generation in Scientific Visualization, Faculty of Informatics, Masaryk University Brno, Informatics Colloquium, Brno, Czech Republic, November 9th, 2004.
- [72] Importance-Driven Image Generation in Scientific Visualization, Department of Informatics, University of Bergen, Norway, August 18th, 2005.
- [73] Importance-Driven Image Generation in Medical Visualization, Faculty of Electrical Engineering, Mathematics and Computer Science, TU Delft, Netherlands, September, 12th, 2005.
- [74] Focus+Context Visualization of Features and Topological Structures, TopoInVis 2005: Topology-Based Methods in Visualization, Budmerice, Slovakia, September, 30th 2005.
- [75] Smart Visibility in Illustrative Visualization, Image Colloquium, Department of Biomedical Engineering, Technische Universiteit Eindhoven, Netherlands, October, 12th, 2005.

- [76] Smart Visibility in Illustrative Visualization, Center for Scientific Computing, Simon Fraser University, Vancouver, Canada, October 21st, 2005.
- [77] Abstraction Techniques for Illustrative Visualization, Invited Talk at VMV 2005: Vision, Modeling, and Visualization 2005, Erlangen, Germany, November 17th, 2005.
- [78] Computer-supported Illustrative Visualization, Informatik Kolloquium, Institut für Informatik, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany, October 11th, 2006.
- [79] Illustrative Visualization Techniques, Kolloquium, Institut für Informatik, Universität Rostock, Germany, November 22nd, 2006.
- [80] Medical Visualization: Articular Cartilage Visualization and other Examples, BBG seminar, Department of Mathematics, University of Bergen, Norway, February, 23rd, 2007.
- [81] Visualization – I see it my way, Invited Talk at NorVis 2007, University of Bergen, Norway, May 22nd, 2007.
- [82] Focus+Context in Illustrative Visualization, Keynote talk at TPCG07, University of Wales, Bangor, UK, June 13th, 2007.
- [83] Visualization – I see it my way II, Seminar 07291, Scientific Visualization, Dagstuhl, Germany, July 16th, 2007.
- [84] Computational Science – Überblick und eigene Forschungsleistungen, Invited Talk, Fakultät für Informatik, Universität Wien, Vienna, Austria, October 10th, 2007.
- [85] Visualization with Style, Distinguished Lecture Series, Scientific Computing and Imaging Institute (SCI), University of Utah, USA, November 2nd 2007.
- [86] Illustrative Rendering with Style, Invited Talk, Technisch-Naturwissenschaftliche Fakultät, Johannes Kepler Universität Linz, Austria, January 25th, 2008.
- [87] How to do a Successful PhD (in Visualization), Seminar of the Research School in Information and Communication Technology, University of Bergen, Norway, May 15th, 2008.
- [88] LiveSync: An Interactive Metaphor for Knowledge-Based Navigation in Medical Visualization. MedViz seminar, University of Bergen, Norway, May 16th, 2008.
- [89] Visualisierung – aktuelle Themen und Trends. Donau-Universität Krems, Austria, June 17th, 2008.
- [90] Knowledge-Assisted Visualization. Keynote talk at 18th Congreso Español de Informática Gráfica (CEIG 2008), Barcelona, Spain, Thursday, Sep 4th, 2008.
- [91] Knowledge-Assisted Visualization. Invited Talk, Department of Computer Science and Engineering, Arizona State University, USA, Monday, Oct 20th, 2008.
- [92] Knowledge-Assisted Visualization. Department seminar, Department of Informatics, University of Bergen, Norway, Thursday, Nov 6th, 2008.
- [93] Current Visualization Topics and Trends. Bilateral Scientific Seminar: Analysis, Processing and Representation of Multi-Dimensional Spatially Distributed Data. VRVis Center for Virtual Reality and Visualization, Vienna, Austria, Thursday, Nov 27th, 2008.

- [94] Visualization with Knowledge and Style. Keynote talk at International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision 2009, WSCG'2009, Plzen, Czech Republic, February 4th, 2009.
- [95] (Scientific) Visualization: Overview and own Research Contributions. Invited Talk, Fakultät für Informatik, Universität Wien, Vienna, Austria, May 18th, 2009.
- [96] A, Seminar 09251, Scientific Visualization, Dagstuhl, Germany, July 15th, 2009.
- [97] Comprehensive Visualization of Cardiac MRI Data, Keynote address at AMI-ARCS 2009, 5th Workshop on Augmented Environments for Medical Imaging including augmented Reality in Computer-Aided Surgery (MICCAI), Imperial College London, UK, September 24th, 2009.
- [98] Integrated Views in Visualization, GMSV seminar, KAUST, Thuwal, Saudi Arabia, February 13th, 2010.
- [99] Integrated Views in Visualization, Institute seminar, Department of Informatics, University of Bergen, Norway, Thursday, May 20th, 2010.
- [100] Comprehensive Visualization of Cardiac MRI Data, MedViz seminar, University of Bergen, Norway, Friday, May 21st, 2010.
- [101] Illustrative Visualization, IFI colloquium, Department of Informatics, University of Zurich, Switzerland, Thursday, Dec 2nd, 2010.
- [102] Visualization of Complex Data: Going from Linked to Integrated Views, Visualisierungsinstitut der Universität Stuttgart (VISUS), University of Stuttgart, Germany, February 22nd, 2011.
- [103] The Haunted Swamps of Heuristics, Capstone talk at EuroVis 2011, Eurographics / IEEE Symposium on Visualization, Bergen, Norway, June 3rd, 2011.
- [104] The Haunted Swamps of Uniformity, Seminar 11231, Scientific Visualization, Dagstuhl, Germany, June 7th, 2011.
- [105] Comprehensive Visualization of Cardiac MRI Data, Workshop Geometry for Anatomy, Banff International Research Station for Mathematical Innovation and Discovery (BIRS), Banff, Canada, August 30th, 2011.
- [106] Visual Steering to Support Decision Making in Visdom, Visual Computing Forum, University of Bergen, December 2nd, 2011.

Projects:

- [1] Exploitation of Coherence in Various Fields of Computer Graphics (cf., e.g., reviewed papers [3], [5], [9], other publications [3]), 1990-1993.
- [2] Visualization of fractal and nonlinear phenomena, cf., e.g., reviewed papers [4], [10], [11], [19], [23]), 1991-1996.
- [3] Nonstandard Rendering Techniques in Computer Graphics (cf., e.g., reviewed papers [14], [15], [19], [26]), 1992-1995
- [4] Visualization of Nonlinear Time Sequences (together with Bernhard Lipp, Atominstitut, Vienna, cf. reviewed paper [29]), 1993-1996.

- [5] Transformation of Cross Sections of Insect Bodies (together with H. Krenn, Zoologisches Institut der Universität Wien, cf. reviewed paper [12]), 1994.
- [6] Phase-Space Representations of Dynamical Systems in the Field of Econometrics (together with Gustav Feichtinger, Institut für Ökonometrie, Operations Research und Systemtheorie, TU Wien, cf., e.g., reviewed papers [27], [28], [38]), 1994-1997.
- [7] Realistic Visualization of Natural Phenomena (Realistische Visualisierung natürlicher Phänomene, FWF Verlängerungsantrag P09818-PHY), (together with Michael Gervautz, Werner Purgathofer, Institut für Computergraphik, Vienna University of Technology), 1996.
- [8] “Studierstube” - A Multi-User Augmented Reality Environment for Scientific Visualization (together with Michael Gervautz, Vienna University of Technology, Axel Pinz, Technical University Graz), FWF project P12074-MAT, 1997-1998.
- [9] Visualization of NC-Milling (together with Georg Glaeser, University of Applied Arts, Vienna, cf. e.g., reviewed papers [43], [52]), 1997-1998.
- [10] Virtual Reality Applications in Spacecraft Operations, (joint project Institute of Computer Graphics and Logica, Belgium), European Space Agency funded project, 1997-1998.
- [11] TunVis: Visualizing specific geologic features for tunnel planning and construction (joint project with Mag. Johannes Meringer, Büro für Technische Geologie, Graz, cf. e.g., reviewed papers [51]), 1997.
- [12] Zeitliche Vorausberechnung von Kopfbewegungen in der Virtuellen Realität (together with Zsolt Szalavari, Anton Fuhrmann), H-19/97, Hochschuljubiläumsstiftung der Stadt Wien, 1997-98.
- [13] Advanced Volume Visualization Techniques (<http://www.cg.tuwien.ac.at/research/vis/vismed/>, together with Tiani Medgraph, Fischerstiege 7, A-1010 Wien), FFF-Project, 1998-2001.
- [14] Volumenvisualisierung von multi-modalen Daten im Bereich der Medizin (together with Ewald Moser, University of Vienna, scholarship (Foerderungsstipendium) Helmut Doleisch, cf. e.g., reviewed papers [59]), 1998-1999.
- [15] Visualisierung wissenschaftlicher Daten über das Internet, FWF Project no. P12811–INF, 1998-2001.
- [16] Connection Tracing, FWF Project no. P13600-Inf, 1999-2002.
- [17] Aluminium foam visualization (together with Brigitte Kriszt, Institut für Werkstoffkunde und Materialprüfung, Vienna University of Technology, cf. e.g., reviewed paper [64]), 1999-2000.
- [18] Visualization Tools for Peripheral CT-Angiography (together with Dominik Fleischmann, General Hospital Vienna; Milos Sramek, Austrian Academy of Sciences), FWF Project no. P15217, 2002-2004.
- [19] ADAPT – Advanced Diagnosis, Analysis and Planning Tools (in Medicine) (<http://www.cg.tuwien.ac.at/research/vis/adapt/>, together with Tiani Medgraph), FFF-Project, 2002-2005.
- [20] COMRADE – Colonoscopic and Orthopaedic Magnetic Resonance Analysis, Diagnosis and Evaluation (<http://www.cg.tuwien.ac.at/research/vis/comrade/>, together with Philips Medical Systems), company funded research project, 2003-2009.

- [21] ExVisation – Expressive Visualization of Volumetric Data (<http://www.cg.tuwien.ac.at/research/vis/exvisation/>). FWF Project no. P18322-N04, 2005-2009.
- [22] PVG – Point-based Volume Graphics. FWF Project no. P18547-N04, 2006-2010
- [23] AngioVis II – Clinical Visualization Tools for Peripheral CT-Angiography (together with Milos Sramek (main applicant), Austrian Academy of Sciences; Johannes Lammer, Medical University Vienna; Dominik Fleischmann, Stanford University). FWF Project no. L291 (Translational-Research-Programm), 2006-2009.
- [24] SimCT – Simulation of an industrial 3D computer tomograph (together with Johann Kastner (main applicant), FH Wels; Michael Mantler, Vienna University of Technology; Company partners: Carl Zeiss – Industrielle Messtechnik GmbH, 3D-Messtechnik GmbH), FFG Project 812136-SCK/KUG (Bridge project), 2006-2009.
- [25] DiagVis – Diagnostic Visualization for Medical Applications (together with GWI Research, an AGFA company), company funded research project, 2006-2008.
- [26] NeuroViewer (interactive visualization and exploration framework for neural networks of fruit fly brains) (together with VRVis and IMP – Research Institute of Molecular Pathology), company funded research project, Apr-Jul, 2008.
- [27] Smart-CT: Genaue Geometriebestimmung und Interfacecharakterisierung von Multi-Materialbauteilen mittels Kegelstrahl-CT (together with Johann Kastner (main applicant), FH Wels; HDEMC Hessenberger GmbH; dTech Steyr – Dynamics and Technology Services GmbH), FFG Project 818108 (Bridge project), 2009-2011.
- [28] SCALE-VS: Research on the Scalability and Confluence of Scientific Visualization and Interactive Segmentation (together with Markus Hadwiger, VRVis (main applicant)), WWTF project, no. ICT08-40, 2009-2011.
- [29] AutARG . Automatic Algorithms for Result Generation in Visualization, FIT-IT project no. 819352, 2009-2012.
- [30] Natural Fetascopic Rendering (together with Kretztechnik, GE Healthcare), a company funded research project, 2009-2011.
- [31] ViMal – The Visualization Mapping Language. FWF Project no. P 21695-N23, 2010-2012.
- [32] Semantic Steering. FWF Project no. P 22542-N23, 2010-2013.
- [33] KASI – Knowledge Assisted Sparse Interaction for Peripheral CT. (together with Milos Sramek (main applicant), Austrian Academy of Sciences; Johannes Lammer, Medical University Vienna; in collaboration with Dominik Fleischmann, Stanford University). FWF project TRP 67-N23, 2010-2013.
- [34] 3D Visualization of Geographic Information: An Integrated and Interactive Approach for Geographic Data, Wissenschaftlich-Technische Zusammenarbeit (WTZ) Österreich-Argentinien, OEAD project AR 11/2011, 2011-2013

Longer Stays Abroad:

1988-1989: Postgraduate Studies of Computer Sciences at the University of Kansas, USA. Duration: two terms. Financed by a Fulbright Scholarship and by

scholarships of the “Ministerium für Wissenschaft und Forschung” and the “Burgenländische Landesregierung”

spring term 1995: Konrad Zuse Guest lectureship (“Gastdozentur”) at the University of Tübingen, Germany. Giving a course on “Visualization of scientific data” (“Visualisierung wissenschaftlicher Daten”), two hours of lecturing and two hours of exercises a week. Collaboration in a research project on the realistic simulation and visualization of textile structures. The stay was financed by the DAAD (“Deutscher Akademischer Austauschdienst”).

spring term 2001: C4-Vertretungsprofessur “Computervisualistik” at the Otto-von-Guericke University Magdeburg.

External Teaching:

- Guest lectureship “Visualization of scientific data” (“Visualisierung wissenschaftlicher Daten”) at the University Tübingen, Germany. Two hours lecturing and two hours of exercises a week, summer term 1995
- “Ausgewählte Kapitel aus Computergrafik: Visualisierung” (2.0 VO, 1 KU), at the Technical University Graz, Austria, in summer term 1997, and in summer term 1998.
- “Advances in Computer Graphics”, guest lectureship at the Department of Computer Science and Engineering, Czech Technical University of Prague, Czech Republic, in summer term 1998.
- “Selected Topics in Visualization (Flow Visualization)”, guest lectureship at the Department of Computer Science, Universidad National del Sur, Bahia Blanca, Argentina, September 1998.
- “Wissenschaftliche Visualisierung”, (2.0 VO, 2.0 LU) lecture at the Department of Simulation and Graphics, Otto-von-Guericke University Magdeburg, spring term 2001.
- “Fraktale Geometrie”, (2.0 VO, 2.0 LU) lecture at the Department of Simulation and Graphics, Otto-von-Guericke University Magdeburg, spring term 2001.
- Eurographics 2005 Tutorial 3: “Illustrative Visualization” (together with B. Preim, University of Magdeburg; D. Ebert, Purdue University; K. Bühler, VRVis Vienna; M. Hadwiger, VRVis Vienna; Ivan Viola, Vienna University of Technology) Half Day tutorial: <http://isg.cs.tcd.ie/eg2005/T3.html>.
- IEEE Visualization 2005 Tutorial 5: “Illustrative Visualization” (together with I. Viola, Vienna University of Technology; M. Hadwiger, VRVis Vienna; B. Preim, University of Magdeburg; M. C. Sousa, University of Calgary; D. Ebert, Purdue University; D. Stredney, The Ohio State University). Full Day tutorial: <http://vis.computer.org/Vis2005/session/tutorials.html>.
- “Topics in Visualization: Scientific and Information Visualization” lecture at the Department of Informatics, University of Bergen, Norway, summer term 2006 (together with H. Hauser, M. Mlejnek), summer term 2007 (together with H. Hauser, I. Viola).
- “Selected Topics in Visualization” guest lectureship at the Department of Computer Science, Universidad National del Sur, Bahia Blanca, Argentina, February/March 2008.

- Various special topic lecture units at the Department of Informatics, University of Bergen, Norway, 2005-.

Teaching at the Vienna University of Technology:

explanation:

VO=lecture, UE=exercise, VU=lecture+exercise, LU=practical course

PR=practicum, SE=seminar, PS=proseminar

The numbers denote hours per week over one semester.

WS=winter semester (1 Oct. – 31 Jan.),

SS=summer semester (1 Mar. - 30 June)

- “Fraktale” (“Fractals”) VO 2.0: WS90/91, WS91/92, WS92/93, WS93/94, WS94/95 (together with Christoph Traxler), WS95/96 (together with Christoph Traxler)
- “Fraktale” (“Fractals”) LU 2.0: WS91/92 (LU 1.0), WS92/93, WS93/94, WS94/95 (together with Christoph Traxler), WS95/96 (together with Christoph Traxler)
- “Visualisierung” (“Visualization”) VO 2.0 + LU 2.0: WS94/95, WS95/96, WS96/97, WS97/98, WS07/08, WS08/09, WS09/10, WS10/11.
- “Computergraphik” (“Computer Graphics”) VO 2.0: WS96/97, WS97/98, WS98/99, WS99/00.
- “Computergraphik 2” (“Computer Graphics 2”) VO 2.0: SS99 (together with W. Purgathofer), SS00 (together with W. Purgathofer), SS01, SS02, SS03, SS04, SS05, SS06, SS07, SS08, SS09, SS10.
- “Computergraphik 3” (“Computer Graphics 3”) VO 2.0: SS99 (together with W. Purgathofer), SS00 (together with W. Purgathofer)
- “Grundlagen wissenschaftlichen Arbeitens“ (“Basics of Scientific Working“) PS 2.0: WS01/02, SS02, WS02/03, WS03/04, SS04, WS04/05, WS05/06.
- „Grundlagen methodischen Arbeitens“ („Basics of Methodical Working“) SE 2.0: WS06/07, WS07/08, WS08/09, WS09/10, WS10/11.
- “Informationsvisualisierung“ (“Information Visualization“) VU 2.0: SS03; VO 2.0, LU 1.0: SS04, SS05, SS06, SS07, SS08, SS09. (together with Helwig Hauser), SS10, SS11.
- „Einführung in die Biomedizinische Technik“ („Biomedical Engineering: An Introduction“) VO 2.0 WS09/10, WS10/11, WS11/12 (one lecture units)
- „Einführung in die Medizinische Informatik“ („Introduction to Informatics and Medicine“) VO 2.0 WS09/10, WS10/11 (two lecture units)
- “Visualisierung 1” (“Visualization 1”) VU 2.0 WS11/12
- “Visualisierung 2” (“Visualization 2”) VU 3.0 SS12
- “Computergraphik” (“Computer Graphics”) VO 2.0 SS12
- “Wissenschaftliches Arbeiten” (“Scientific Working”) SE 2.0 WS11/12
- regularly since the habilitation (1996): seminars SE, proseminars PS, computer science projects PR
- until 1997 co-supervision of about 20 Master’s theses

- supervision of Master theses:

- [1] Herbert Oppolzer: Interactive Analysis of Dynamical Systems (1996)
- [2] Andreas Goldsteiner: Simulation von differentieller Interferometrie und Vergleich mit experimentellen Ergebnissen (1997)
- [3] Harald Brun: Visualisierung in Österreich (1997)
- [4] Thomas Kucera: Dynamical Systems Visualization on the Basis of Poincare Sections (1997). Winner of the OCG-Förderpreis 1998
- [5] Lukas Mroz: Streamarrows - A Visualization Technique for Complex Dynamical Systems (1997)
- [6] Markus Götzinger: Visualisierung dynamischer Systeme mittels Strängen von Strömungslinien (1997)
- [7] Uschi Dorau: Computergestützte 3D-Visualisierung in der Landschaftsplanung (1997)
- [8] Andreas König: Real Time Simulation and Visualization of NC Milling Processes for Inhomogeneous Materials on Low-End Graphics Hardware (1997)
- [9] Horst Otto Meinhart: TunVis - Photorealistisches Visualisierungssystem für die Tunnelplanung (1997)
- [10] Roman Rajkowitsch: Asap-B Visualizing company relevant attributes to improve productivity (1998)
- [11] Siegrun Berger: Telemedicine (1999)
- [12] Helmut Doleisch: Multimodal Visualization of Anatomical and Functional Volume Data of the Human Brain (1999)
- [13] Wolfgang Greimel: A Display System for Surgical Navigation in ORL-Surgery (2000)
- [14] Armin Kanitsar: Advanced Visualization Techniques for Vessel Investigation (2001)
- [15] Daniel Wagner: EndoView: a System for Fast Virtual Endoscopic Rendering and Registration (June 2001)
- [16] Andre Neubauer: Cell-Based First-Hit Ray Casting (September 2001)
- [17] Wolfgang Rieger: Neue Strategien für interaktive Prozeßvisualisierung (January 2002)
- [18] Mario Bruckschwaiger: Evaluation of Binary Segmentation Techniques Regarding their Usability in Medical Volume Visualization (January 2002)
- [19] Ivan Viola: Applications of Hardware-Accelerated Filtering in Computer Graphics (May 2002)
- [20] Gerald Nikolaus Sahling: Interactive 3D Scatterplots – From High-Dimensional Data to Insight (September 2002)
- [21] Alois Dornhofer: A Discrete Fourier Transform Pair for Arbitrary Sampling Geometries with Applications to Frequency Domain Volume Rendering on the Body-Centered Cubic Lattice (March 2003)
- [22] Matej Mlejnek: Modelling the Visualization Mapping for Volumetric Flow Visualization (May 2003)
- [23] Oliver Mattausch: Practical Reconstruction Schemes and Hardware-Accelerated Direct Volume Rendering on Body-Centered Cubic Grids (January 2004)

- [24] Rudolf Seemann: Exploring the Biomechanical Model of the Lower Limb (March 2004)
- [25] Stefan Bruckner: Efficient Volume Visualization of Large Medical Datasets (June 2004)
- [26] Caroline Langer: Interactive Diffusion-Based Volume Segmentation On Graphics Hardware (November 2004)
- [27] Martin Artner: High-Quality Volume Rendering with Resampling in the Frequency Domain (January 2005)
- [28] Michael Knapp: Memory Allocation Strategies for Large Volumetric Data-Sets (January 2005)
- [29] Henning Scharsach: Advanced Raycasting for Virtual Endoscopy on Consumer Graphics Hardware (April 2005)
- [30] Christopher Dräger: A ChainMail Algorithm for Direct Volume Deformation in Virtual Endoscopy Applications (May 2005)
- [31] Peter Rautek: D²VR: High-Quality Volume Rendering of Projection-based Volumetric Data (May 2005)
- [32] Alexander Hartmann: An Advanced Data Structure for Large Medical Datasets (May 2005)
- [33] Sebastian Zambal: 3D Active Appearance Models for Segmentation of Cardiac MRI Data (August 2005)
- [34] Leopold Kühschelm: Advanced Image-based Transfer Function Design (December 2005)
- [35] Moritz Gerl: Volume Hatching for Illustrative Visualization (external thesis Universität Koblenz, November 2006)
- [36] Alexander Brandstätter: Visualization of Online Sales Databases (February 2007).
- [37] Martin Haidacher: Importance-Driven Rendering in Interventional Imaging (August 2007)
- [38] Andreas Schöllhuber: Automatic Segmentation of Contrast Enhanced Cardiac MRI for Myocardial Perfusion Analysis (March 2008)
- [39] Wolfgang Altendorfer: Void Tracking in SiC Particle Reinforced Al (March 2008)
- [40] Andreas Monitzer: Fluid Simulation on the GPU with Complex Obstacles Using the Lattice Boltzmann Method (July 2008)
- [41] Philipp Hartl: Visualization of Calendar Data (October 2008)
- [42] Gerlinde Emsenhuber: Visibility Histograms in Direct Volume Rendering (October 2008)
- [43] Andreas Ammer: Linking Science Together: How Networking Can Support Research – a Peer-to-Peer Approach (October 2008)
- [44] Laura Fritz: Interactive Exploration and Quantification of Industrial CT Data (January 2009)
- [45] Matthias Froschauer: Interactive Optimization, Distance Computation and Data Estimation in Parallel Coordinates (February 2009)
- [46] Stefan Müller: Interaktive Visualisierung Semantischer Graphen (March 2009)

- [47] Veronika Šoltészová: Visual Queries in Neuronal Data Exploration (June 2009)
 - [48] Nicolas Pühringer: Sketch-based Modelling for Volume Visualization (July 2009)
 - [49] Clemens Brandorff: Enhancement, Registration, and Visualization of High Resolution Episcopic Microscopy Data (July 2009)
 - [50] Bilal Alsallakh: Interactive Visual Analysis of Relational Data and Applications in Event-Based Business Analytics (July 2009)
 - [51] Andreas Opitz: Classification and Visualization of Volume Data using Clustering (October 2009)
 - [52] Jakob Spörk: High-performance GPU based Rendering for Real-Time, rigid 2D/3D-Image Registration in Radiation Oncology (January 2010)
 - [53] David Major: Markov Random Field Based Structure Localisation of Vertebrae for 3D-Segmentation of the Spine in CT Volume Data (May 2010)
 - [54] Andreas Ritzberger: Noise and Artifact Reduction in Interactive Volume Renderings of Electron-Microscopy Data-Sets (May 2010)
 - [55] Stefan Hehr: Scattered Multi-field Volumes (February 2011)
 - [56] Martin Kinkelin: Variational Reconstruction and GPU Ray-Casting of Non-Uniform Point Sets using B-Spline Pyramids (May 2011)
 - [57] Andreas Grünauer: Coronary Artery Tracking with Rule-based Gap Closing (July 2011)
 - [58] Michael Hanzl: Spontaneous Social Networks (July 2011)
 - [59] Tobias Fechter: Deformation Based Manual Segmentation in Three and Four Dimensions (September 2011)
 - [60] Fritz-Michael Gschwantner: Advanced Measurement and Quantification of Industrial CT Data (October 2011)
 - [61] Christian Basch: Animated Transitions Across Multiple Dimensions for Volumetric Data (October 2011)
 - [62] Johanna Schmidt: Interactive Variability Analysis for Initial Sample Testing of Industrial CT Data (November 2011?)
- supervision of PhD theses:
 - [1] Rainer Wegenkittl: Visualization of Complex Dynamical Systems (1997)
 - [2] Helwig Löffelmann: Visualizing Local Properties and Characteristic Structures of Dynamical systems (1998)
 - [3] Lukas Mroz: Real-Time Volume Visualization on Low-End Hardware (Feb 2001)
 - [4] Andreas König: Usability Issues in 3D Medical Visualization (Apr 2001)
 - [5] Balazs Csebfalvi: Interactive Volume-Rendering Techniques for Medical Data Visualization (May 2001)
 - [6] Anna Vilanova: Visualization Techniques for Virtual Endoscopy (Sep 2001)
 - [7] Jiri Hladůvka: Derivatives and Eigensystems for Volume-Data Analysis and Visualization (Jan 2002)
 - [8] Armin Kanitsar: Curved Planar Reformation for Vessel Visualization (March 2004). Recipient of the Resselpreis 2004 of the TU Vienna.

- [9] Markus Hadwiger: High-Quality Visualization and Filtering of Textures and Segmented Volume Data on Consumer Graphics Hardware (June 2004)
 - [10] Helmut Doleisch: Visual Analysis of Complex Simulation Data using Multiple Heterogenous Views (November 2004)
 - [11] Sören Grimm: Real-Time Mono- and Multi-Volume Rendering of Large Medical Datasets on Standard PC Hardware (April 2005)
 - [12] Ivan Viola: Importance-Driven Expressive Visualization (May 2005)
 - [13] André Neubauer: Virtual Endoscopy for Preoperative Planning and Training of Endonasal Transsphenoidal Pituitary Surgery (May 2005)
 - [14] Alexandra La Cruz: 3D Modelling and Reconstruction of Peripheral Arteries (January 2006)
 - [15] Matej Mlejnek: Medical Visualization for Orthopedic Applications (May 2006)
 - [16] Stefan Bruckner: Interactive Illustrative Volume Visualization (April 2008)
 - [17] Christoph Heinzl: Analysis and Visualization of Industrial CT Data (December 2008)
 - [18] Maurice Termeer: Comprehensive Visualization of Cardiac MRI Data (December 2008)
 - [19] Peter Kohlmann: LiveSync: Smart Linking of 2D and 3D Views in Medical Applications (December 2008)
 - [20] Peter Rautek: Semantic Visualization Mapping for Volume Illustration (December 2008)
 - [21] Sebastian Zambal: Anatomical Modeling for Image Analysis in Cardiology (March 2009)
 - [22] Daniel Patel: Expressive Visualization and Rapid Interpretation of Seismic Volumes (October 2009, University of Bergen, Norway)
 - [23] Johanna Beyer: GPU-based Multi-Volume Rendering of Complex Data in Neuroscience and Neurosurgery (October 2009)
 - [24] Erald Vuçini: On Visualization and Reconstruction from Non-uniform Point Sets (October 2009)
 - [25] Muhammad Muddassir Malik: Feature Centric Volume Visualization (October 2009)
 - [26] Jean-Paul Balabanian: Multi-Aspect Visualization: Going from Linked Views to Integrated Views (October 2009, University of Bergen, Norway)
 - [27] Jürgen Waser: Visual Steering to Support Decision Making in Visdom (June 2011)
 - [28] Martin Haidacher: Information-based Feature Enhancement in Scientific Visualization (June 2011)
 - [29] Harald Piringer: Large Data Scalability in Interactive Visual Analysis (September 2011)
 - [30] Marius Gavrilescu: Visualization and Graphical Processing of Volume Data (October 2011, Technical University Iași, Romania, co-supervisor).
- Member of the habilitation commission or reviewer of the habilitation theses in 13 cases at the Vienna University of Technology

Other Scientific Activities:

- [1] Adjunct Professor at the Department of Informatics, University of Bergen, Norway (2005-2011).
- [2] Co - Chief Editor of the Journal Computer Graphics Forum (<http://www.cg.org/EG/Publications/CGF>), (2008-2012).
- [3] Editorial Board member:
- Journal Computers&Graphics, Pergamon Press (1999 - 2007)
 - IEEE Transactions on Visualization and Computer Graphics, Associate Editor (2003 - 2007)
- [4] Membership in steering boards of scientific associations
- Member of the Steering Committee of the Eurographics Working Group on Data Visualization, (2002-), chairing the Steering Committee (2011-)
 - Member of Executive Committee of IEEE Technical Committee on Visualization and Graphics (VGTC) (2004-)
 - Member of Executive Committee of the Eurographics association (2007-)
 - Member of the Steering Committee of the Workshops Knowledge-assisted Visualization 2007, 2008, 2010
 - Member of the Advisory Board of the Workshop Revise09 - Refactoring Visualization from Experience 2009
- [5] Conference-, Program-, Paper-Chair:
- VisSym'99, the Joint EUROGRAPHICS – IEEE TCVG Symposium on Visualization, symposium and program co-chair (together with W. Ribarsky, USA), (<http://www.cg.tuwien.ac.at/conferences/VisSym99/>).
 - IEEE Visualization 2004 application papers co-chair (together with K. Müller, USA; K.-L. Ma, USA)
 - Volume Graphics 2005 program co-chair (together with I. Fujishiro, Japan)
 - Scientific Visualization: Challenges for the Future, Dagstuhl Seminar 05231, 2005, co-organizer (together with Th. Ertl, Germany; K. Joy, USA; G. Nielson, USA)
 - IEEE Visualization 2005 paper co-chair (together with H. Rushmeier, USA; C. Silva, USA)
 - Eurographics 2006 paper co-chair (together with L. Szirmay-Kalos, Hungary)
 - IEEE Visualization 2006 paper co-chair (together with C. Silva, USA; A. Pang, USA)
 - Scientific Visualization, Dagstuhl Seminar 09251, 2009, co-organizer (together with D. Ebert, USA; H. Hagen, Germany; Arie Kaufman, USA)
- [6] Scientific Proponent, member of the Scientific Advisory Committee (2000-2007), member of the Scientific Review Committee (2008-2010), key researcher (since 2010)

of the Kplus center of excellence VRVis Zentrum für Virtual Reality und Visualisierung Forschungs-GmbH (<http://www.vrvis.at/>).

[7] Member of the Programm Committee of the following conferences:

- WSCG: International Conference in Central Europe on Computer Graphics and Visualization, Plzen, Czech Republic: 1995 – 2004, 2007-2009.
- SCCG: Spring Conference on Computer Graphics and its Applications, Bratislava, Slovakia: 1996 – 2004, 2009.
- EUROGRAPHICS Workshop on Visualization in Scientific Computing: 1996 (Prague, Czech Republic), 1997 (Boulogne sur Mer, France), 1998 (Blaubeuren, Germany).
- “SOFSEM’97, XXIV-th Seminar on Current Trends in Theory and Practice of Informatics”, Milovy, Czech Republic, 22.-29. November 1997.
- 6th International Workshop on Digital Image Processing and Computer Graphics, Applications in Humanities and Natural Sciences, Vienna, Austria, 20.-22. October, 1997.
- EuroVis (VisSym until 2004), the Joint EUROGRAPHICS – IEEE VGTC Symposium on Visualization: 1999 - 2005, 2007 - 2009.
- VMV: Vision, Modeling, and Visualization: 2002 – 2007, 2009
- IEEE Visualization: 2001, 2002, 2003, 2007
- EUROGRAPHICS 2002 Short/Poster Presentation
- EUROGRAPHICS 2004 (senior reviewer), 2005, 2007, 2008
- IEEE/SIGGRAPH Symposium on Volume Visualization and Graphics (VolVis) 2004
- Simulation and Visualisation, Magdeburg: 2005
- SIBGRAPI, XVII Brazilian Symposium on Computer Graphics and Image Processing: 2004
- TopoInVis: Topology-based Methods in Visualization: 2005, 2007, 2009
- GRAPP - International Conference on Computer Graphics Theory and Applications: 2006, 2007
- International Symposium on Volume Graphics (VG07)
- Pacific Graphics (PG): 2007-2009
- 3rd International Symposium on Visual Computing (ISVC07)
- Yearly Usability Symposium (USAB) of the Workgroup HCI&UE of the Austrian Computer Society, 2007, 2008.
- Shape Modeling International (SMI): 2008, 2009
- Simulation and Visualization 2008 (SimVis2008)
- International Workshop on Ontology Alignment and Visualization – OnAV: 2008, 2009
- Computational Aesthetics: 2008
- Visual Computing for Biomedicine (EG VCBM) 2008.
- IEEE Pacific Visualization Symposium 2009
- VolumeGraphics 2010 (IEEE/EG International Symposium on Volume Graphics 2–3 May, 2010 Norrköping, Sweden)
- Industrielle Computertomografie - Zerstörungsfreie Bauteilprüfung, 3D-Materialcharakterisierung und Geometriebestimmung. Fachtagung 27.–29. September 2010 FH OÖ Campus Wels / Österreich

- Workshop de Computación Gráfica, Imágenes y Visualización (WCGIV) 2010, 2011, Buenos Aires, Argentina
- 15th International Conference on System Theory, Control and Computing (ICSTCC 2011), Oct 14-16, 2011, Sinaia, Romania
- Working with Uncertainty Workshop (IEEE Visualization 2011 Workshop)

[8] Reviewer for the following conferences:

- EUROGRAPHICS conferences: 1992, 1995-1998, 2002-2003, 2011, 2012.
- EUROGRAPHICS Symposium on Rendering (title until 2002: EUROGRAPHICS Workshop on Rendering): 1994, 1995, 2000, 2001, 2003.
- IEEE Visualization: 1997 – 2000, 2004, 2008-2009.
- Computer Graphics International (CGI): 1998 (Hannover, Germany).
- ICVC99: The International Conference on Visual Computing: 1999 (Goa, India).
- GKPO, International Conference on Computer Graphics and Image Processing: 2000 (Podlesice, Poland)
- Graphics Interface (Canada): 2000, 2004.
- Dagstuhl-Seminar 2000211 “Scientific Visualization” (2000)
- CGIM, Computer Graphics and Imaging 2001.
- ACM Siggraph 2002, 2003, 2006, 2007, 2010.
- ACM Siggraph Asia 2011.
- ICCS - International Conference on Computational Science: TSCG - Technical Session on Computer Graphics: 2003, 2006
- Winter Simulation Conference 2003 (WSC '03), Luisiana, USA.
- High Performance Computing Symposium 2003 (HPC 2003), Orlando, FL, USA.
- SPIE Conference on Visualization and Data Analysis (VDA): 2004-2007
- Simulation and Visualisation, Magdeburg: 2004
- Graphite 2004, International Conference on Computer Graphics and Interactive Techniques in Australasia and Southeast Asia: 2004
- Symposium on Geometry Processing (SGP): 2005
- WSCG: International Conference in Central Europe on Computer Graphics and Visualization, Plzen, Czech Republic: 2006
- VLMS2006: International Workshop on Visualization in Medicine and Life Sciences, Rügen, Germany:
- IEEE Symposium on Visual Analytics Science and Technology (VAST) 2007
- VizNET Showcase review 2007, 2008.
- CACIC 2010, XVI Congreso Argentino de Ciencias de la Computación.

[9] Reviewer for the following scientific journals and books:

- Computer Graphics Forum, NCC Blackwell.
- The Visual Computer, Springer.
- IEEE Computer Graphics and Applications, IEEE Computer Society.
- Computers&Graphics, Pergamon Press.
- IEEE Transactions on Visualization and Computer Graphics, IEEE Computer Society.
- IBM Journal of Research and Development, IBM.
- Future Generations Computer Systems (FGCS), Elsevier Science.
- ACM Transactions on Graphics.

- Machine Graphics & Vision.
- Computing, Archives for Informatics and Numerical Computation, Springer.
- Computing and Visualization in Science, Springer.
- Artificial Intelligence in Medicine, Elsevier .
- ASME Journal of Dynamic Systems, Measurement, and Control
- Brunnett, G., Hamann, B., Müller, H., Linsen, L., (eds.) Geometric Modelling for Scientific Visualization, Springer 2003
- IEEE Transactions on Medical Imaging (TMI)
- it – Information Technology, Oldenburg
- Journal of Zhejiang University SCIENCE (JZUS)
- Springer Book Series “Mathematics and Visualization”
- IEE Proceedings - Vision, Image, and Signal Processing
- Computer-Aided Design, Elsevier
- Journal of Virtual Reality and Broadcasting (JVRB)
- The Journal of Imaging Science & Technology (JIST)
- Nondestructive Testing and Evaluation, Taylor & Francis
- International Journal of Human-Computer Studies
- Entropy – Open Access Journal (<http://www.mdpi.com/journal/entropy/>)

[10] Expertises for the following organizations:

- Netherlands Organization for Scientific Research (NWO)
- Grant Agency of the Czech Republic (GACR)
- Ministry of Education, Youth and Sports of the Czech Republic
- Natural Sciences and Engineering Research Council of Canada (NSERC)
- National Science Foundation (NSF USA)
- TU Dresden, Germany (for appointment commission)
- Friedrich Schiller Universität Jena, Germany (for appointment commission)
- Simon Fraser University, Canada.
- State University of New York, Stony Brook, USA.
- University of Stuttgart, Germany.
- University of Tübingen, Germany.
- Grant Agency, Academy of Sciences of the Czech Republic.
- University of Bergen, Norway
- University of Magdeburg, Germany
- Worcester Polytechnic Institute (WPI), USA
- ETH Zürich, Switzerland
- Österreichische Forschungsförderungsgesellschaft (FFG)
- University of Siegen, Germany.
- Dutch Technology Foundations STW.
- Westfälische Wilhelms-Universität Münster, Germany.
- Swiss National Science Foundation (SNF), Switzerland.
- Purdue University, USA.
- TU Chemnitz, Germany.
- Technical University of Iași, Romania.
- Swansea University, UK.
- UNC Charlotte, USA.
- KTH Royal Institute of Technology, Sweden.

[11] External member of PhD committee, PhD reviews:

- Czech Technical University of Prague, Czech Republic: 1998, 2001, 2011
- University of Kaiserslautern, Germany, 2002.
- Universitat Politècnica de Catalunya, Spain, 2002, 2008.
- Otto-von-Guericke-Universität Magdeburg, Germany, 2003, 2009
- University of Tübingen, Germany, 2004
- University of Stuttgart, Germany, 2005
- Delft University of Technology, Netherlands, 2005
- Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, 2006
- Technical University Eindhoven, Netherlands, 2007
- Comenius University Bratislava, 2008, 2009, 2011
- Universität für angewandte Kunst Wien, 2009
- Technische Universität Graz, 2009
- Masaryk University Brno, Czech Republic, 2011
- University of Groningen, Netherlands, (2011)
- Technical University Iași, Romania 2011

[12] Miscellaneous:

- Panelist: Visualization in the 21st Century, New Frontiers, New Topics, New Challenges, Participants. 9th EUROGRAPHICS Workshop on Visualization in Scientific Computing, Blaubeuren, Germany, April 20th, 1998.
- IEEE Visualization conference member of best paper award committee: 2002, 2005, 2006 (chair).
- Jury member of the medvis-award (Karl-Heinz-Höhne-Preis) 2004.
- Third place of the Eurographics EG 2005 Medical Prize for “The AngioVis ToolBox”.
- NorVis07 Panel participant: “Future Trends in Visualization”, University of Bergen, Norway, May 22nd, 2007.
- TPCG07 awards panel member, University of Wales, Bangor, UK, June, 2007.
- Panel organizer and panelist: Application of Illustrative Visualization in Medicine, Earth Science, and Oil&Gas Exploration and Production. IllustraVis09 – interdisciplinary gathering on illustrative visualization, Bergen, Norway, June 4th, 2009.