

Curriculum Vitae

DI Dr. Jürgen Waser

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Personal Data

Date of birth	December 22, 1980
Birthplace	Wels
Citizenship	Austria
Military Service	fulfilled

Education

10/2008 - 06/2011	Vienna, University of Technology Doctoral programme in technical sciences. PhD thesis: <i>Visual Steering to Support Decision Making in Visdom</i> http://visdom.at/media/pdf/phd-thesis/waser.thesis.2011.pdf
10/2000 - 06/2008	Vienna, University of Technology Technical physics, diploma with distinction. <ul style="list-style-type: none">• Focus: Simulation, Animation and Visualization.• Diploma thesis: <i>v4flair - A scientific visualization tool for the FLAPW package FLAIR</i> (development of an interactive application for the visualization of simulation data)
08/2006 - 05/2007	Dalhousie University, Halifax, Canada Two terms overseas study funded by TASSEP (Trans Atlantic Science Student Exchange Program).
09/1990 - 06/1999	Humanistisches Stiftsgymnasium, Kremsmünster Completed with distinction
since 1988	Video and Animation Autodidact, courses at the university of applied arts, Vienna

Professional Experience

since 10/2008	Researcher at the VRVis , Research Center for Virtual Reality and Visualization, focus on visual analytics and simulation steering for decision support
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Professional Experience (continued)

- since 2007 **Web Programmer** websites, e.g., for the Center for Computational Materials Science <http://www.cms.tuwien.ac.at>
- since 2002 **Video Producer** DVDs, e.g., for TCG Unitech, Gruber Extrusionstechnik, Waser GmbH, Hoba company
- since 2004 **Photographer** pictures for advertising, e.g., for Eckermann Drums: <http://www.eckermanndrums.com>
- 1996-2008 **Roofer, Tinsmith, Carpenter** at [Fa. Hartl](#)

Projects

- 2015-2016 [floodvisor](#), applied research project, funded by COMET FFG
- 2012-2015 [Scenario Pool](#), funded by the Vienna Science and Technology Fund (WWTF) through project ICT12-009
- 2010-2013 [Semantic Steering](#) (together with Eduard Gröller), funded by the Austrian Science Fund (FWF) through project P22543-N23

Publications

- 2016 D. Cornel, A. Konev, B. Sadransky, Z. Horváth, A. Brambilla, I. Viola, and J. Waser. Composite Flow Maps. *Computer Graphics Forum (Proceedings EuroVis 2016)*, to appear
- Z. Horváth, Rui A.P. Perdigão, J. Waser, D. Cornel, A. Konev, G. Blöschl. Kepler Shuffle for Real-World Flood Simulations on GPUs. *In International Journal of High Performance Computing*, 2016
- 2015 Z. Horváth, J. Waser, Rui A.P. Perdigão, A. Konev, G. Blöschl. A Two-Dimensional Numerical Scheme of Dry/Wet Fronts for the Saint-Venant System of Shallow Water Equations. *In International Journal for Numerical Methods in Fluids*, 77(3), pages 159-182, 2015
- G. Blöschl, Z. Horváth, A. Kiss, J. Komma, T. Nester, Rui A.P. Perdigão, A. Viglione, J. Waser. New Methods for Flood Risk Management. *Österreichische Ingenieur- und Architekten-Zeitschrift (ÖIAZ)*, 1, pages 6-13, 2015)
- D. Cornel, J. Waser, A. Konev, B. Sadransky, Z. Horváth, and M. E. Gröller. Visualization of Object-Centered Vulnerability to Possible Flood Hazards. *Computer Graphics Forum (Proceedings EuroVis 2015)*, 34(3), pages 331-341, 2015)
- 2014 A. Konev, J. Waser, B. Sadransky, D. Cornel, Rui A.P. Perdigão, Z. Horváth, and M. E. Gröller. Run Watchers: Automatic Simulation-Based Decision Support in Flood Management. *IEEE Transactions on Visualization and Computer Graphics (Proceedings IEEE VAST 2014)*, 20(12), pages 1873-1882, 2014

Publications (continued)

- J. Waser, A. Konev, B. Sadransky, Z. Horváth, H. Ribičić, R. Carnecky, P. Kluding, B. Schindler. Many Plans: Multidimensional Ensembles for Visual Decision Support in Flood Management. *Computer Graphics Forum (Proceedings EuroVis 2014)*, 33(3), pages 281-290, 2014
- R. Carnecky, T. Brunner, S. Born, J. Waser, C. Heine, R. Peikert. Vortex Detection in 4D MRI Data: Using the Proper Orthogonal Decomposition for Improved Noise-Robustness. *Proceedings EuroVis 2014 - Short Papers*, pages 127-131, 2014
- 2013 B. Sadransky, H. Ribičić, R. Carnecky, and J. Waser. Visdom Mobile - Decision support on-site using visual simulation control. *Proceedings 29th Spring Conference on Computer Graphics, Smolenice, Slovakia, 2013*
- B. Schindler, J. Waser, H. Ribičić, R. Fuchs, and R. Peikert. Multiverse data-flow control. *IEEE Transactions on Visualization and Computer Graphics*, 19(6), pages 1005-1019, 2013
- H. Ribičić, J. Waser, R. Fuchs, G. Blöschl, and M. E. Gröller. Visual Analysis and Steering of Flooding Simulations. *IEEE Transactions on Visualization and Computer Graphics*, pages 1062-1075, 2013
- 2012 H. Ribičić, J. Waser, R. Gurbat, B. Sadransky, and M. E. Gröller. Sketching Uncertainty into Simulations. *IEEE Transactions on Visualization and Computer Graphics (Proceedings IEEE Vis)*, 18(12):2255-2264, 2012
- B. Schindler, R. Fuchs, S. Barp, J. Waser, A. Pobitzer, R. Carnecky, K. Matkovic, and R. Peikert. Lagrangian Coherent Structures for Design Analysis of Revolving Doors. *IEEE Transactions on Visualization and Computer Graphics (Proceedings IEEE Vis 2012)*, 18(12), pages 2159-2168, 2012
- J. Waser, H. Ribičić and G. Blöschl. Ensemblesimulationen in Visdom - Entscheidungshilfe durch visuelle Interaktion. *Forum für Hydrologie und Wasserbewirtschaftung/FgHW*, 31.12:404-406, 2012
- R. Fuchs, B. Schindler, R. Carnecky, J. Waser, Y. Jang, and R. Peikert., Adaptive Treelet Meshes for Efficient Streak-Surface Visualization on the GPU. *Proceedings Vision, Modeling, and Visualization VMV 2012*, pages 119-126, 2012
- 2011 J. Waser, H. Ribičić, R. Fuchs, C. Hirsch, B. Schindler, G. Blöschl, and M. E. Gröller. Nodes on Ropes: A comprehensive Data and Control Flow for Steering Ensemble Simulations. *IEEE Transactions on Visualization and Computer Graphics (Proceedings IEEE Vis 2011)*, 17(12):1872-1881, 2011
- B. Schindler, R. Fuchs, J. Waser and R. Peikert. Marching Correctors - Fast and Precise Polygonal Isosurfaces of SPH Data. *In Proceedings of the 6th International SPHERIC Workshop*, 125-132, 2011
- J. Waser, R. Fuchs, H. Ribičić and G. Blöschl. Visuelle Aktionsplanung im Hochwassermanagement. *Forum für Hydrologie und Wasserbewirtschaftung/FgHW*, 30.11:280-286, 2011

Publications (continued)

- 2010 J. Waser, R. Fuchs, H. Ribičić, B. Schindler, G. Blöschl, and M. E. Gröller. World Lines. *IEEE Transactions on Visualization and Computer Graphics (Proceedings IEEE Vis 2010, **honorable mention**)*, 16(6):1458-1467, 2010
- R. Fuchs, J. Kemmler, B. Schindler, J. Waser, F. Sadlo, H. Hauser and R. Peikert. Toward a Lagrangian Vector Field Topology. *Computer Graphics Forum (Proceedings EuroVis 2010)*, 29:1163-1172, 2010
- 2009 R. Fuchs, J. Waser and M. E. Gröller. Visual Human+Machine Learning. *IEEE Transactions on Visualization and Computer Graphics (Proceedings IEEE Vis 2009)*, 15(6):1327-1334, 2009

Selected Talks

- 2014 Visdom für Kanalnetzsimulation und Starkregenereignisse. Invited Talk, *Meeting of the Steb department for sewer systems and flood protection*, Cologne, September 24th, 2014
- 2013 Interaktive Steuerung und Visualisierung von Hochwassersimulationen. Invited Talk, *Hochwasserweiterbildung Ausbildung und Training*, Vienna, November 28th, 2013
- 2012 Hilfestellung im Hochwassermanagement mit Visdom. Invited Talk, *Meeting of the association for mutual assistance in flood mitigation along the river Rhine (Hochwassernotgemeinschaft Rhein e.V.)*, Cologne, October 31st, 2012
- Visual Action Planning for Disaster Management. Invited Talk, *The Fourth Shanghai-Dujiangyan International Disaster Reduction & Public Security Forum*, Chengdu, China, October 12th, 2012
- Virtuelle Planung für den Katastrophenfall. Invited Talk, *Meeting of the workgroup for the management of severe floods (AK HoWa 10,69)*, fire department Cologne, March 22nd, 2012
- 2011 Interaktive Entscheidungshilfe in Visdom. Invited Talk, *Meeting of the workgroup for action planning and invited guests*, flood protection centre Steb Cologne, November 10th, 2011
- Nodes on Ropes: A Comprehensive Data and Control Flow for Steering Ensemble Simulations. Conference Talk, *IEEE Visualization (Vis)*, Providence, Rhode Island, U.S., October 26th, 2011
- Visual Steering to Support Decision Making in Visdom. *Bilateral Austrian-Russian scientific seminar on Science and Best Practice of Visualizations and Interactions*, Vienna, Austria, June 9th, 2011
- Visuelle Aktionsplanung im Hochwassermanagement. Conference Talk, *Tag der Hydrologie*, Vienna, Austria, March 25th, 2011
- 2010 World Lines. Conference Talk, *IEEE Visualization (Vis)*, Salt Lake City, U.S., October 28th, 2010

Other Publications and Awards

- 2014 Mercur Award, 2nd place, for the Visdom project. Innovation price of the Austrian Economics Chambers.
- 2012 Visdom - Integrated Visualization. *International Innovation*, issue 3, pages 96-98, October 2012
- 2011 Am Computer herumprobieren. *Die Presse*, September 2011

Activities

- since 10/2008 Co-founder and core developer of the integrated visualization system Visdom <http://visdom.at/>
- 10/2007 Contributions to the education platform CISCI (Cinema and Science):
- *Generation of ultrashort laser pulses*
 - *Pulse Compression*
- since 2007 Websites, e.g., for the Center for Computational Materials Science <http://www.cms.tuwien.ac.at>
- since 2002 Videos, e.g., educational movie and animations about ultrashort physics: *Femto*, <http://visdom.at/videos/#education/femto>