Full Publication List

Ivan Viola

Books

M. Sbert, M. Feixas, J. Rigau, **I. Viola**, M. Chover, **Information Theory Tools For Computer Graphics**, In Series: *Synthesis Lectures on Computer Graphics and Animation,* Morgan & Claypool Publishers, 2009

Book Chapters

I. Viola, M. E. Gröller: **On the Role of Topology in Focus+Context Visualization**, Book chapter of *Topology-based Methods in Visualization*, pp. 171-181, 2007

Z. Toth, I. Viola, A. Ferko, M. E. Gröller: **N-dimensional Data-Dependent Reconstruction Using Topological Changes**, Book chapter of *Topology-based Methods in Visualization*, pp. 1-16, 2007

Journal Papers

V. Solteszova, C. Turkay, M. Price, **I. Viola**: **A Perceptual-Statistics Shading Model**, *IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE Scientific Visualization 2012)*, 18(12), conditionally accepted, 2012

A. Brambilla, **I. Viola**, H. Hauser: **A Hierarchical Splitting Scheme to Reveal Insight into Highly Self-Occluded Integral Surfaces**, *Journal of WSCG*, 20, accepted, 2012

Å. Birkeland, S. Bruckner, A. Brambilla, **I. Viola**: **Illustrative Membrane Clipping**, *Computer Graphics Forum (Proceedings of EuroVis)*, 31(3):905-914, 2012

M. Ruiz, A. Bardera, I. Boada, **I. Viola**, M. Feixas, M. Sbert, **Automatic Transfer Functions based on Informational Divergence**, *IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE Visualization 2011)*, 17(12) 2011

O. K. Øye, D. M. Ulvang, O. H. Gilja, H. Hauser, **I. Viola**, **Illustrative Couinaud Segmentation for Ultrasound Liver Examinations,** *Lecture Notes in Computer Science (Proceedings of Smart Graphics)*, 6815, Springer, 2011

S. Bruckner, P. Rautek, **I. Viola**, M. Roberts, M. C. Sousa, M. E. Gröller: **Hybrid Visibility Compositing and Masking for Illustrative** Rendering, *Computers & Graphics (Special Issue on Illustrative Visualization)*, 34(4):361-369, 2010

V. Šoltészová, D. Patel, S. Bruckner, **I. Viola**: **A Multidirectional Occlusion Shading Model for Direct Volume Rendering**, *Computer Graphics Forum (Proceedings of Eurographics / IEEE VGTC Symposium on Visualization EuroVis),* 29(3):883-891, 2010

K. Nylund, S. Ødegaard, G. Folvik, G. Arslan, T. Hausken, **I. Viola**, H. Hauser, O. H. Gilja: **Sonography of the small intestine**, *World Journal of Gastroenterology*. 15(11):1319, 2009

M. Ruiz, **I. Viola**, I. Boada, S. Bruckner, M. Feixas, M. Sbert: **Similarity-based Exploded Views**, Lecture Notes in Computer Science (*Proceedings of 8th International Symposium on Smart Graphics*), 5166:154-165, 2008

O. D. Lampe, **I. Viola**, N. Reuter, H. Hauser: **Two-Level Approach to Efficient Visualization of Protein Dynamics**, *IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE Visualization)*, 13(6):1616-1623, 2007

O. H. Gilja, J. G. Hatlebakk, S. Ødegaard, A. Berstad, **I. Viola**, C. Giertsen, T. Hausken, H. Gregersen: **Advanced imaging and visualization in gastrointestinal disorders**, *World Journal of Gastroenterology*, 13(9):1408-1421, 2007

I. Viola, M. Feixas, M. Sbert, M. E. Gröller: **Importance-Driven Focus of Attention**, *IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE Visualization)*, 12(5):933-940, 2006

P. Rautek, **I. Viola**, M. E. Gröller: **Caricaturistic Visualization**, *IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE Visualization)*, 12(5):1085-1092, 2006

I. Viola, A. Kanitsar, M. E. Gröller: **Importance-Driven Feature Enhancement in Volume Visualization**, *IEEE Transactions on Visualization and Computer Graphics (Invited Paper)*, 11(4):408-418, 2005

I. Viola, A. Kanitsar, M. E. Gröller: **Hardware-Accelerated Frequency Domain Volume Rendering**, *Computer Graphics & Geometry (Invited Paper),* 6(2):60-79, 2004

Reviewed Conference Papers

O. K. Øye, W. Wein, D. M. Ulvang, K. Matre, **I. Viola**: **Real time image-based tracking of 4D ultrasound data**, *Lecture Notes in Computer Science (Proceedings of MICCAI)*, accepted, 2012

A. Sima, S. Buckley, **I. Viola**: **An interactive tool for analysis and optimization of texture parameters in photorealistic virtual 3d models**, *In Proceedings of International Annals of Photogrammetry and Remote Sensing*, accepted, 2012

E. Lidal, H. Hauser, **I. Viola**: **Geological Storytelling – Graphically Exploring and Communicating Geological Sketches**, *In Proceedings of Sketch-Based Interfaces and Modeling (SBIM 2012)*,11-20, 2012

A. Brambilla, R. Carnecky, R. Peikert, **I. Viola**, H. Hauser**: Illustrative Flow Visualization: State of the Art , Trends and Challenges,** *In Proceedings of Eurographics 2012 State of the Art Reports (STARs)*, 75–94, 2012

V. Soltészová, R. Patel, H. Hauser, **I. Viola: Stylized Volume Visualization of Streamed Sonar Data**, *In Proceedings of Spring Conference on Computer Graphics (SCCG 2012)*, 13–20, 2012

E. Lidal, H. Hauser, **I. Viola**: **Design Principles for Cutaway Visualization of Geological Models,** *In Proceedings of Spring Conference on Computer Graphics (SCCG 2012)*, 53–60, 2012

J. Parulek, **I. Viola: Implicit representation of molecular surfaces**, *In Proceedings of IEEE Pacific Visualization Symposium*, 217-224, 2012

V. Solteszova, D. Patel, **I. Viola**, **Chromatic Shadows for Improved Perception**, In *Proceedings of ACM Non-Photorealistic Animation and Rendering Symposium*, 2011

K. L. Palmerius, R. Havre, O. H. Gilja and **I. Viola**, **Ultrasound Palpation by Haptic Elastography**, In *Proceedings of IEEE Symposium on Computer Based Medical* Systems, 2011

Å. Birkeland, **I. Viola**: **Ultrasound Paining of Vascular Tree**, In *Proceedings of Vision, Modeling, and Visualization*, 2010

P. Angelelli, **I. Viola**, H. Hauser, O. H. Gilja, K. Nylund: **Guided Visualization of Ultrasound Image Sequences**, In *Proceedings of Eurographics Workshop on Visual Computing in Biology and Medicine VCBM*, pp. 125-132, 2010

J.-P. Balabanian, **I. Viola**, M. E. Gröller: **Interactive Illustrative Visualization of Hierarchical Volume Data**, In *Proceedings of Graphics Interface*, pp. 137-144, Best Student Paper Award!, 2010

D. Patel, S. Bruckner, **I. Viola**, M. E. Gröller: **Seismic Volume Visualization for Horizon Extraction,** In *Proceedings of IEEE Pacific Visualization*, pp. 73-80, 2010

T. Ropinski, **I. Viola**, M. Biermann, H. Hauser, K. Hinrichs: **Multimodal Visualization with Interactive Closeups**: In *Proceedings of Eurographics UK Theory and Practice of Computer Graphics*, pp. 17-24, Best Paper Honorable Mention!, 2009

Å. Birkeland and **I. Viola**: **View-Dependent Peel-Away Visualization for Volumetric Data**, In *Proceedings of Spring Conference on Computer Graphics SCCG*, pp. 133-139, 2009

J.-P. Balabanian, M. Ystad, **I. Viola**, A. Lundervold, H. Hauser, E. Gröller: **Hierarchical Volume Visualization of Brain Anatomy**, In *Proceedings of Vision Modeling and Visualization*, pp. 313-322, 2008

I. Viola, K. Nylund, O. K. Øye, D. M. Ulvang, O. H. Gilja, H. Hauser: **Illustrated Ultrasound for Multimodal Data Interpretation of Liver Examinations**, In *Proceedings of Eurographics Workshop on Visual Computing in Biomedicine*, pp. 125-133, 2008

M. Ruiz, I. Boada, **I. Viola**, S. Bruckner, M. Feixas, M. Sbert: **Obscurance-based Volume Rendering Framework**, In *Proceedings of IEEE/EG Symposium on Volume Graphics*, pp. 113-120, 2008

J.-P. Balabanian, **I. Viola**, T. Möller and M. E. Gröller: **Temporal Styles for Time-Varying Volume Data**, In *Proceedings of 3DPVT'08 - Symposium on 3D Data Processing, Visualization and Transmission*, pp. 81-89, 2008

M. Burns, M. Haidacher, W. Wein, **I. Viola**, M. E. Gröller: **Feature Emphasis and Contextual Cutaways for Multimodal Medical Visualization**, In *Proceedings of Eurographics / IEEE VGTC Symposium on Visualization EuroVis*, pp. 275-282, 2007

J.-P. Balabanian, **I. Viola**, E. Ona, R. Patel, M. E. Gröller: **Sonar Explorer: A New Tool for Visualization of Fish Schools from 3D Sonar Data**, In *Proceedings of Eurographics / IEEE VGTC Symposium on Visualization*, pp. 155-162, 2007

M. Artner, T. Möller, **I. Viola**, M. E. Gröller: **High-Quality Volume Rendering with Resampling in the Frequency Domain**, In *Proceedings of Eurographics / IEEE VGTC Symposium on Visualization*, pp. 85-92, 2005

I. Viola, M. E. Gröller: **Smart Visibility in Visualization**, In *Proceedings of Eurographics Workshop on Computational Aesthetics Computational Aesthetics in Graphics, Visualization and Imaging*, pp. 209-216, 2005

I. Viola, A. Kanitsar, M. E. Gröller: **GPU-based Frequency Domain Volume Rendering**, In *Proceedings of Spring Conference on Computer Graphics SCCG* (Second Best Paper Award!), pp. 55-62, 2004

I. Viola, A. Kanitsar, M. E. Gröller: **Importance-Driven Volume Rendering**, In *Proceedings of IEEE Visualization* (Nominarion for Best Paper Award!), pp. 139-145, 2004

I. Viola, A. Kanitsar, M. E. Gröller: **Hardware-Based Nonlinear Filtering and Segmentation using High-Level Shading Languages**, In *Proceedings of IEEE Visualization*, pp. 309-316, 2003

M. Hadwiger, **I. Viola**, T. Theußl, H. Hauser: **Fast and Flexible High-Quality Texture Filtering With Tiled High-Resolution Filters**, In *Proceedings of Vision, Modeling and Visualization*, pp. 155-162, 2002

L. Neumann, B. Csébfalvi, **I. Viola**, M. Mlejnek, M. E. Gröller: **Feature-Preserving Volume Filtering**, In *Proceedings of Eurographics / IEEE TCVG Symposium on Visualization*, pp. 105-114, 2002

Tutorials

M. Feixas, M. Chen, H. Jänicke, **I. Viola**, M. Sbert , **Applications of Information Theory to Scientific Visualization**, IEEE VisWeek Tutorial 2011

M. Sbert, M. Feixas, **I. Viola**, **Information Theory in Computer Graphics and Visualization**, ACM SIGGRAPH Asia Course, 2011

M. C. Sousa, D. Ebert, **I. Viola**, B. Andrews, S. Bruckner, C. Correa, W. Chen: **Interactive Tools for Scientific and Medical Illustration Composition,** half-day tutorial, Eurographics, 2008

I. Viola, S. Bruckner, M. C. Sousa, D. Ebert, C. Correa: **Illustrative Display and Interaction in Visualization**, half-day tutorial, IEEE Visusualization, 2007

M. Sbert, M. Feixas, J. Rigau, M. Chover, **I. Viola**: **Applications of Information Theory to Computer Graphics**, half-day tutorial, Eurographics, 2007

I. Viola, M. C. Sousa, D. Ebert, B. Andrews, B. Gooch, S. Bruckner, B. Preim, D. Stredney, N. Svakhine, C. Tietjen: **Illustrative Visualization for Science and Medicine**, full-day tutorial, IEEE Visualization, 2006

I. Viola, M. C. Sousa, D. Ebert, B. Andrews, B. Gooch, S. Bruckner, B. Preim, D. Stredney, N. Svakhine, C. Tietjen: **Illustrative Visualization for Science and Medicine**, half-day tutorial, Eurographics, 2006

M. C. Sousa, D. Ebert, B. Gooch, **I. Viola**, S. Bruckner, B. Andrews, D. Stredney, N. Svakhine: **Illustrative Visualization for Medicine and Science**, full-day course, ACM SIGGRAPH, 2006

I. Viola, M. E. Gröller, K. Bühler, M. Hadwiger, B. Preim, D. Ebert, M. C. Sousa, D. Stredney: **Illustrative Visualization**, full-day tutorial, IEEE Visualization, 2005

I. Viola, M. E. Gröller, K. Bühler, M. Hadwiger, B. Preim, D. Ebert, **Illustrative Visualization**, half-day tutorial, Eurographics, 2005

Invited Talks

Rendering of Ultrasound Volume Data, National Taiwan University, 19.12.2011

Information Theory in Volume Visualization, Joint Taipei Statistical Symposium, 18.12.2011

Passing Through the Trough of Disillusionment of Illustrative Visualization, Keynote at EG-UK Theory and Practice in Computer Graphics, University of Warwick, United Kingdom, 07.09. 2011

Illustrative Visualization of Physiological Models and Imaging,
        MedViz Conference, Bergen, 17.01.2012
        Dagstuhl Seminar on Scientific Visualization, Germany, 09.06.2011

Illustrative Visualization Toolbox for Visual Storytelling, Talk at Storytelling in Visualization Workshop 2010, UC Davis, Davis, USA, 01.11.2010

IllustraSound: Novel Methods for Visualization of Couinaud Liver Segmentation
        Society for Medical Innovation and Technology, Trondheim, Noway, 02.09.2010
        Vienna University of Technology, Austria, 02.07.2010
        Ecole de Technologie Superieure Montreal, Canada, 28.05.2010
        Norwegian Society for Diagnostic Ultrasound, Lillehammer, Norway 22.04.2010

IllustraSound MedViz Project, MedViz Conference, Bergen, Norway, 13.01.2010

Multimodal Visualization with Interactive Closeups
        Vienna University of Technology, Austria, 17.11.2009
        MedViz Conference, Bergen, Norway, 13.11.2009

Orbis Pictus MMX, Department of Informatics Seminar, Bergen, Norway, 23.10.2009

Importance-Driven Visualization, Technical University Delft, The Netherlands, 10.10.2008

Semantics-Driven Visualization, University of Girona, Spain, 23.09.2008

Importance-Driven Multimodal Visualization, University of Münster, Germany, 09.09.2008

Illustrative Visualization: Concepts and Applications, University of Münster, Germany, 31.01.2008

Importance-Driven Visualization for Medical Imaging, MedViz Conference, Bergen, Norway 14.12.2006

Focus of Attention for Volumetric Data Inspection. I. Viola, M. Feixas, M. Sbert, M. E. Gröller, Dagstuhl Seminar on Computation Aesthetics, 29.05.2006

Importance-Driven Expressive Visualization, dissertation report,
        CMR Computing, Bergen, Norway 10.10.2006
        University of Siegen, Germany, 11.11.2005
        Comenius University Bratislava, Slovakia, 10.10.2005
        University of Magdeburg, Germany, 07.10.2005

Hardware-Based Nonlinear Filtering using High-Level Shading Languages, University of Erlangen, Germany, 03.06.2003

Thesis

Importance-Driven Expressive Visualization, PhD thesis, 2005

Applications of Hardware-Accelerated Filtering in Computer Graphics, Master thesis, 2002

Sketches, Posters, Workshops

W. Lueks, **I. Viola**, M. van der Zwan, H. Bekker, T. Isenberg **, Spatially Continuous Change of Abstraction in Molecular Visualization**, IEEE BioVis Poster, 2011

P. Rautek and **I. Viola**: **Visual Abstractions and Interaction Metaphors for Knowledge Assisted Volume Visualization**, workshop talk, Knowledge Assisted Visualization 2008

P. Rautek, S. Bruckner, M. E. Gröller, **I. Viola**: **Illustrative Visualization – New Technology or Useless Tautology?**, ACM SIGGRAPH, Computer Graphics Quarterly, Volume 42, Number 3, 2008

S. Bruckner, **I. Viola**, M. E. Gröller: **VolumeShop: Interactive Direct Volume Illustration**, technical sketch, In ACM Siggraph 2005 DVD Proceedings, 2005

Popular Science Reports

L. Helljesen, S. Kotopoulis, K. Nylund, **I. Viola**, T. Hausken, O. H. Gilja: **Klinisk bruk av 3D-ultralyd**, *Kirurgen* (2), 2012

M. Krassnitzer, **I. Viola**: **Explodierende Körper**, *Clinicum* Magazine (10), 2006

A. Kanitsar, **I. Viola**, K. Bühler: **X-rayed X-mastree**, TV broadcasting, Bayerisches Fernsehen *Faszination Wissen* 08.12., 19:30, 2005

Status quo June 18, 2012