

2013 IEEE Pacific Visualization Symposium

(PacificVis 2013)

**Sydney, Australia
27 February – 1 March 2013**



**IEEE Catalog Number: CFP13APV-POD
ISBN: 978-1-4673-4798-3**

Contents

Message from the Program Chairs	vi
IEEE Visualization and Graphics Technical Committee (VGTC)	vii
Conference Committee.....	viii
International Program Committee.....	viii
Steering Committee	viii
Paper Reviewers.....	ix
Keynote Speaker: Giuseppe Di Battista.....	x
Keynote Speaker: Charles (Chuck) Hansen	xi

Papers

Session 1: Text and Map Visualization

Chair: Peter Eades

Circular-Arc Cartograms.....	1
Jan-Hinrich Kämper, Stephen G. Kobourov, Martin Nöllenburg	
Exploring Entities in Text with Descriptive Non-photorealistic Rendering.....	9
Meng-Wei Chang, Christopher Collins	
Constrained Optimization for Disoccluding Geographic Landmarks in 3D Urban Maps.....	17
Daichi Hirono, Hsiang-Yun Wu, Masatoshi Arikawa, Shigeo Takahashi	
Improved Grid Map Layout by Point Set Matching	25
David Eppstein, Marc van Kreveld, Bettina Speckmann, Frank Staals	

Session 2: Big Data Visualization

Chair: Tim Dwyer

Reordering Massive Sequence Views: Enabling Temporal and Structural Analysis of Dynamic Networks.....	33
Stef van den Elzen, Danny Holten, Jorik Blaas, Jarke J. van Wijk	
Smooth Bundling of Large Streaming and Sequence Graphs	41
C. Hurter, O. Ersoy, A. Telea	
GraphCharter: Combining Browsing with Query to Explore Large Semantic Graphs	49
Ying Tu, Han-Wei Shen	
Visual Summaries for Graph Collections.....	57
David Koop, Juliana Freire, Cláudio T. Silva	

Session 3: Volume Rendering

Chair: Hans Hagen

Local WYSIWYG Volume Visualization	65
Hanqi Guo, Xiaoru Yuan	
Transfer Function Design based on User Selected Samples for Intuitive Multivariate Volume Exploration.....	73
Liang Zhou, Charles Hansen	
Evaluation of Depth of Field for Depth Perception in DVR	81
A.V.Pascal Grosset, Mathias Schott, Georges-Pierre Bonneau, Charles D. Hansen	
Transformations for Volumetric Range Distribution Queries	89
Steven Martin, Han-Wei Shen	

Session 4: Visualization in Medicine and Natural Sciences

Chair: Han-Wei Shen

Guiding Deep Brain Stimulation Interventions by Fusing Multimodal Uncertainty Regions.....	97
Alexander Bock, Norbert Lang, Gianpaolo Evangelista, Ralph Lehrke, Timo Ropinski	
Discovering and Visualizing Patterns in EEG Data.....	105
Erik W. Anderson, Catherine Chong, Gilbert A. Preston, Cláudio T. Silva	
A Topologically-Enhanced Juxtaposition Tool for Hybrid Wind Tunnel	113
Yuriko Takeshima, Issei Fujishiro, Shigeo Takahashi, Toshiyuki Hayase	
Visualization of Piecewise Linear Interface Calculation.....	121
Grzegorz K. Karch, Filip Sadlo, Christian Meister, Philipp Rauschenberger, Kathrin Eisenschmidt, Bernhard Weigand, Thomas Ertl	
Illustrative Visualization of Cardiac and Aortic Blood Flow from 4D MRI Data	129
Silvia Born, Michael Markl, Matthias Gutberlet, Gerik Scheuermann	

Session 5: Time-varying and Multivariate Visualization

Chair: Timo Ropinski

iTree: Exploring Time-Varying Data using Indexable Tree	137
Yi Gu, Chaoli Wang	
Interactive Selection of Multivariate Features in Large Spatiotemporal Data	145
Jingyuan Wang, Robert Sisneros, Jian Huang	
Self-Organizing Maps for Multi-Objective Pareto Frontiers	153
Shahar Chen, David Amid, Ofer M. Shir, Lior Limonad, David Boaz, Ateret Anaby-Tavor, Tobias Schreck	
Joint Contour Nets: Computation and Properties	161
Hamish Carr, David Duke	

Session 6: Visual Analytics

Chair: Thomas Ertl

Visual Task Solution Strategies in Tree Diagrams.....	169
Michael Burch, Gennady Andrienko, Natalia Andrienko, Markus Höferlin, Michael Raschke, Daniel Weiskopf	
Exploring Agent-Based Simulations in Political Science Using Aggregate Temporal Graphs.....	177
R. Jordan Crouser, Jeremy G. Freeman, Andrew Winslow, Remco Chang	
Visual Analysis of Uncertainties in Ocean Forecasts for Planning and Operation of Off-Shore Structures.....	185
Thomas Höllt, Ahmed Magdy, Guoning Chen, Ganesh Gopalakrishnan, Ibrahim Hoteit, Charles D. Hansen, Markus Hadwiger	
A Visual Analytics Approach to Exploring Protein Flexibility Subspaces	193
Scott Barlowe, Jing Yang, Donald J. Jacobs, Dennis R. Livesay, Jamal Alsakran, Ye Zhao, Deeptak Verma, James Mottonen	

Session 7: Tree and Graph Visualization

Chair: Martin Nöllenburg

Visualizing Edge-Edge Relations in Graphs.....	201
Corinna Vehlow, Jan Hasenauer, Fabian J. Theis, Daniel Weiskopf	
On the Faithfulness of Graph Visualizations	209
Quan Nguyen, Peter Eades, Seok-Hee Hong	
FlexGD: A Flexible Force-directed Model for Graph Drawing.....	217
Anne-Marie Kermarrec, Afshin Moin	
A Generative Layout Approach for Rooted Tree Drawings.....	225
Hans-Jörg Schulz, Zabedul Akbar, Frank Maurer	

Session 8: Vector and Tensor Fields Visualization

Chair: Hamish Carr

FlowGraph: A Compound Hierarchical Graph for Flow Field Exploration.....	233
Jun Ma, Chaoli Wang, Ching-Kuang Shene	
Poisson-based Tools for Flow Visualization	241
Janick Martinez Esturo, Maik Schulze, Christian Rössl, Holger Theisel	
Visualizing Linear Neighborhoods in Non-Linear Vector Fields.....	249
Stefan Koch, Alexander Wiebel, Jens Kasten, Mario Hlawitschka	
Exploring Vector Fields with Distribution-based Streamline Analysis	257
Kewei Lu, Abon Chaudhuri, Teng-Yok Lee, Han-Wei Shen, Pak Chung Wong	
Automatic, Tensor-Guided Illustrative Vector Field Visualization.....	265
Cornelia Auer, Jens Kasten, Andrea Kratz, Eugene Zhang, Ingrid Hotz	
Author Index.....	273