

Table of Contents

Papers

Reconfiguring Triangulations with Edge Flips and Point Moves	1
<i>Greg Aloupis, Prosenjit Bose, and Pat Morin</i>	
Drawing Power Law Graphs	12
<i>Reid Andersen, Fan Chung, and Lincoln Lu</i>	
Hexagonal Grid Drawings: Algorithms and Lower Bounds	18
<i>Shabnam Aziza and Therese Biedl</i>	
Improved Bounds for the Number of ($\leq k$)-Sets, Convex Quadrilaterals, and the Rectilinear Crossing Number of K_n	25
<i>József Balogh and Gelasio Salazar</i>	
On the Realizable Weaving Patterns of Polynomial Curves in \mathbb{R}^3	36
<i>Saugata Basu, Raghavan Dhandapani, and Richard Pollack</i>	
Drawing the AS Graph in 2.5 Dimensions	43
<i>Michael Baur, Ulrik Brandes, Marco Gaertler, and Dorothea Wagner</i>	
Boundary Labeling: Models and Efficient Algorithms for Rectangular Maps	49
<i>Michael A. Bekos, Michael Kaufmann, Antonios Symvonis, and Alexander Wolff</i>	
Convex Drawings of 3-Connected Plane Graphs	60
<i>Nicolas Bonichon, Stefan Felsner, and Mohamed Mosbah</i>	
Partitions of Complete Geometric Graphs into Plane Trees	71
<i>Prosenjit Bose, Ferran Hurtado, Eduardo Rivera-Campo, and David R. Wood</i>	
Additional PC-Tree Planarity Conditions	82
<i>John M. Boyer</i>	
GraphML Transformation	89
<i>Ulrik Brandes and Christian Pich</i>	
Clustering Cycles into Cycles of Clusters	100
<i>Pier Francesco Cortese, Giuseppe Di Battista, Maurizio Patrignani, and Maurizio Pizzonia</i>	
Unit Bar-Visibility Layouts of Triangulated Polygons	111
<i>Alice M. Dean, Ellen Gethner, and Joan P. Hutchinson</i>	
Really Straight Graph Drawings	122
<i>Vida Dujmović, Matthew Suderman, and David R. Wood</i>	

Layouts of Graph Subdivisions	133
<i>Vida Dujmović and David R. Wood</i>	
Label Number Maximization in the Slider Model	144
<i>Dietmar Ebner, Gunnar W. Klau, and René Weiskircher</i>	
An Efficient Implementation of Sugiyama’s Algorithm for Layered Graph Drawing	155
<i>Markus Eiglsperger, Martin Siebenhaller, and Michael Kaufmann</i>	
Random Geometric Graph Diameter in the Unit Disk with ℓ_p Metric	167
<i>Robert B. Ellis, Jeremy L. Martin, and Catherine Yan</i>	
Algorithms for Drawing Media	173
<i>David Eppstein</i>	
Confluent Layered Drawings	184
<i>David Eppstein, Michael T. Goodrich, and Jeremy Yu Meng</i>	
Simultaneous Embedding of Planar Graphs with Few Bends	195
<i>Cesim Erten and Stephen G. Kobourov</i>	
A Fast and Simple Heuristic for Constrained Two-Level Crossing Reduction	206
<i>Michael Forster</i>	
Contact and Intersection Representations	217
<i>Hubert de Fraysseix and Patrice Ossona de Mendez</i>	
Dynamic Graph Drawing of Sequences of Orthogonal and Hierarchical Graphs	228
<i>Carsten Görg, Peter Birke, Mathias Pohl, and Stephan Diehl</i>	
Graph Drawing by Stress Majorization	239
<i>Emden R. Gansner, Yehuda Koren, and Stephen North</i>	
Computing Radial Drawings on the Minimum Number of Circles	251
<i>Emilio Di Giacomo, Walter Didimo, Giuseppe Liotta, and Henk Meijer</i>	
Hamiltonian-with-Handles Graphs and the k -Spine Drawability Problem	262
<i>Emilio Di Giacomo, Walter Didimo, Giuseppe Liotta, and Matthew Suderman</i>	
Distributed Graph Layout for Sensor Networks	273
<i>Craig Gotsman and Yehuda Koren</i>	
Drawing Large Graphs with a Potential-Field-Based Multilevel Algorithm	285
<i>Stefan Hachul and Michael Jünger</i>	
Building Blocks of Upward Planar Digraphs	296
<i>Patrick Healy and Karol Lynch</i>	

A Linear Time Algorithm for Constructing Maximally Symmetric Straight-Line Drawings of Planar Graphs	307
<i>Seok-Hee Hong and Peter Eades</i>	
Train Tracks and Confluent Drawings	318
<i>Peter Hui, Marcus Schaefer, and Daniel Štefankovič</i>	
The Three Dimensional Logic Engine	329
<i>Matthew Kitching and Sue Whitesides</i>	
Long Alternating Paths in Bicolored Point Sets	340
<i>Jan Kynčl, János Pach, and Géza Tóth</i>	
Intersection Reverse Sequences and Geometric Applications	349
<i>Adam Marcus and Gábor Tardos</i>	
New Exact Results and Bounds for Bipartite Crossing Numbers of Meshes	360
<i>Matthew C. Newton, Ondrej Sýkora, Martin Užovič, and Imrich Vrt'o</i>	
Drawing Pfaffian Graphs	371
<i>Serguei Norine</i>	
3D Visualization of Semantic Metadata Models and Ontologies	377
<i>Charalampos Papamanthou, Ioannis G. Tollis, and Martin Doerr</i>	
A Note on the Self-similarity of Some Orthogonal Drawings	389
<i>Maurizio Patrignani</i>	
No-Three-in-Line-in-3D	395
<i>Attila Pór and David R. Wood</i>	
Visual Navigation of Compound Graphs	403
<i>Marcus Raitner</i>	
Layout Volumes of the Hypercube	414
<i>Lubomír Torok and Imrich Vrt'o</i>	
New Theoretical Bounds of Visibility Representation of Plane Graphs . . .	425
<i>Huaming Zhang and Xin He</i>	

Software Demonstrations

Visualizing Large Graphs with Compound-Fisheye Views and Treemaps	431
<i>James Abello, Stephen G. Kobourov, and Roman Yusufov</i>	
A Compound Graph Layout Algorithm for Biological Pathways	442
<i>Ugur Dogrusoz, Erhan Giral, Ahmet Cetintas, Ali Civril, and Emek Demir</i>	

Curvilinear Graph Drawing Using the Force-Directed Method 448
Benjamin Finkel and Roberto Tamassia

Graphael: A System for Generalized Force-Directed Layouts 454
*David Forrester, Stephen G. Kobourov, Armand Navabi,
Kevin Wampler, and Gary V. Yee*

QUOGGLES: Query On Graphs –
A Graphical Largely Extensible System 465
Paul Holleis and Franz J. Brandenburg

Visualisation of Large and Complex Networks Using PolyPlane 471
Seok-Hee Hong and Tom Murtagh

The Metro Map Layout Problem 482
Seok-Hee Hong, Damian Merrick, and Hugo A.D. do Nascimento

An Interactive Multi-user System for Simultaneous Graph Drawing 492
Stephen G. Kobourov and Chandan Pitta

Posters

Gravisto: Graph Visualization Toolkit 502
*Christian Bachmaier, Franz J. Brandenburg, Michael Forster,
Paul Holleis, and Marcus Raitner*

DNA Secondary Structures for Probe Design 504
Yanga Byun and Kyungsook Han

Open Problems Wiki 508
Marcus Raitner

Visualization and ILOG CPLEX 510
Georg Sander and Adrian Vasiliu

Graph Drawing Contest

Graph-Drawing Contest Report 512
*Franz J. Brandenburg, Christian A. Duncan, Emden R. Gansner,
and Stephen G. Kobourov*

Invited Talk

Fast Algorithms for Hard Graph Problems:
Bidimensionality, Minors, and Local Treewidth 517
Erik D. Demaine and MohammadTaghi Hajiaghayi

Author Index 535