



GD 2003

GD 2003 - Final Program

September 21 – 24

Sunday, September 21

16:00 – 19:00 Welcoming reception and registration (GD 2003 Conference Site)

Monday, September 22

8:00 – 9:00 Registration

9:00 – 9:10 Opening

9:10 – 10:30 Session 1 - Planarity and Planar Drawings

(Chair: P. Ossona de Mendez)

9:10 – 9:30 Confluent Drawings: Visualizing Nonplanar Diagrams in a Planar Way
M. Dickerson, D. Eppstein, M. Goodrich, and J. Y. Meng

9:30 – 9:50 An Experimental Study of Crossing Minimization Heuristics
C. Gutwenger and P. Mutzel

9:50 – 10:10 Stop Minding Your P's and Q's: Implementing a Fast and Simple DFS-based Planarity Testing and Embedding Algorithm
J. M. Boyer, P. F. Cortese, M. Patrignani, and G. Di Battista

10:10 – 10:30 Bounds and methods for k -planar crossing numbers
F. Shahrokhi, O. Sýkora, L. Székely, and I. Vrt'o

10:30 – 11:10 Coffee Break

11:10 – 12:30 Session 2 - Geometric Graph Theory

(Chair: S. Kobourov)

11:10 – 11:30 How many ways can one draw a graph?
J. Pach and G. Tóth

11:30 – 11:50 Two results on intersection graphs of polygons
J. Kratochvíl and M. Pergel

11:50 – 12:10 Stretching of Jordan Arc Contact Systems
H. de Fraysseix and P. Ossona de Mendez

12:10 – 12:30 Noncrossing Hamiltonian Paths in Geometric Graphs
J. Černý, Z. Dvořák, V. Jelínek, and J. Kára



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12:30 – 14:00 Lunch



14:00 – 15:10 Session 3 - Applications and Systems - Part I
(Chair: J. Marks) – Session Sponsored by Tom Sawyer Software

- 14:00 – 14:20 GraphAEL: Graph Animations with Evolving Layouts
C. Erten, P. Harding, S. Kobourov, K. Wampler, and G. Yee
- 14:20 – 14:40 Visualizing Related Metabolic Pathways in Two and a Half Dimensions
U. Brandes, T. Dwyer, and F. Schreiber
- 14:40 – 14:55 Govisual for case tools Borland Together ControlCenter and Gentleware Poseidon
C. Gutwenger, J. Kupke, K. Klein, and S. Leipert
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14:55 – 15:05 Announcing GD 2004 – Janos Pach

15:05 – 15:30 Coffee Break

15:30 – 16:40 Session 4 - Straight-line, Circular, and Circular-Arc Drawings
(Chair: D. Wagner)

- 15:30 – 15:45 Area-Efficient Drawings of Outerplanar Graphs
A. Garg and A. Rusu
- 15:45 – 16:05 A Framework for User-Grouped Circular Drawings
J. Six and I. Tollis
- 16:05 – 16:25 Fixed-Location Circular-Arc Drawing of Planar Graphs
A. Efrat, C. Erten, and S. Kobourov
- 16:25 – 16:40 A More Practical Algorithm for Drawing Binary Trees in Linear Area with Arbitrary Aspect Ratio
A. Garg and A. Rusu
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16:40 – 17:00 Coffee Break

17:00 – 17:40 Session 5 – Symmetries
(Chair: Md. S. Rahman)

- 17:00 – 17:20 An Integer Programming Approach to Fuzzy Symmetry Detection
C. Buchheim and M. Jünger
- 17:20 – 17:40 Barycentric Drawings of Periodic Graphs
O. Delgado-Friedrichs
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Tuesday, September 23

9:00 – 10:55 Session 6 - 3D-drawings (Chair: S. H. Whitesides)

- 9:00 – 9:20 Three-Dimensional Grid Drawings with Sub-Quadratic Volume
V. Dujmović and D. Wood
- 9:20 – 9:40 Laying Out Iterated Line Digraphs Using Queues
T. Hasunuma
- 9:40 – 10:00 Track Drawings of Graphs with Constant Queue Number
E. Di Giacomo and H. Meijer
- 10:00 – 10:20 3D Visibility Representations of Complete Graphs
J. Štola
- 10:20 – 10:35 Drawing Series-Parallel Graphs on Restricted Integer 3D Grids
E. Di Giacomo
- 10:35 – 10:55 Nearly Optimal Three Dimensional Layout of Hypercube Networks
T. Calamoneri and A. Massini

10:55 – 11:30 Coffee Break

11:30 – 12:30 Session 7 - Embeddings and Triangulations (Chair: G. Di Battista)

- 11:30 – 11:50 Graph Embedding with Minimum Depth and Maximum External Face
C. Gutwenger and P. Mutzel
- 11:50 – 12:10 More Efficient Generation of Plane Triangulations
S. Nakano and T. Uno
- 12:10 – 12:30 Planar Embeddings of Graphs with Specified Edge Lengths
S. Cabello, E. D. Demaine, and G. Rote

12:30 – 14:00 Lunch

14:00 – 15:00 Invited Lecture – Pat Hanrahan (Stanford University, USA)
“On Being in the Right Space” (Chair: P. Eades)

15:00 – 15:20 Coffee Break



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15:20 – 16:30 Session 8 - Applications and Systems - Part II
(Chair: M. T. Goodrich)

- 15:20 – 15:40 BGPlay: a System for Visualizing the Interdomain Routing Evolution
G. Di Battista, F. Mariani, M. Patrignani, and M. Pizzonia
- 15:40 – 15:55 GraphEx: An Improved Graph Translation Service
S. Bridgeman
- 15:55 – 16:10 A Constrained, Force-Directed Layout Algorithm for Biological Pathways
B. Genc and U. Dogrusoz
- 16:10 – 16:30 Intersection-Free Morphing of Planar Graphs
C. Erten, S. Kobourov, and C. Pitta
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16:30 – 16:50 Coffee Break

16:50 – 17:30 Session 9 - Fixed Parameter Tractability
(Chair: S. K. Wismath)

- 16:50 – 17:10 Fixed Parameter Algorithms for One-Sided Crossing Minimization Revisited
V. Dujmović, V. H. Fernau, and M. Kaufmann
- 17:10 – 17:30 Experiments with the Fixed - Parameter Approach for Two - Layer Planarization
M. Suderman and S. Whitesides
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20:00 Social Dinner
Graph Drawing Contest – Chair: Franz Brandenburg

Wednesday, September 24

9:00 – 10:10 Session 10 - Clusters, Cuts, and Orthogonal Drawings
(Chair: I. G. Tollis)

- 9:00 – 9:20 Characterizing Families of Cuts that can be Represented by Axis-Parallel Rectangles
U. Brandes, S. Cornelsen, and D. Wagner
- 9:20 – 9:40 Convex Drawing for c-Planar Biconnected Clustered Graphs
H. Nagamochi and K. Kuroya
- 9:40 – 9:55 Layout of Directed Hypergraphs with Orthogonal Hyperedges
G. Sander
- 9:55 – 10:10 No-Bend Orthogonal Drawings of Subdivisions of Planar Triconnected Cubic Graphs
Md. S. Rahman, N. Egi, and T. Nishizeki
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10:10 – 10:40 Coffee Break

10:40 – 11:35 Session 11 - k -level Drawings
(Chair: H. Meijer)

- 10:40 – 11:00 Radial Level Planarity Testing and Embedding in Linear Time
C. Bachmaier, F. Brandenburg, and M. Forster
- 11:00 – 11:20 An Improved Approximation to the One-sided Bilayer Drawing
H. Nagamochi
- 11:20 – 11:35 Straight-line Drawings of 2-Outerplanar Graphs on Two Curves
E. Di Giacomo and W. Didimo

11:35 – 12:35 Invited Lecture – Giuseppe Italiano (Univ. of Rome, “Tor Vergata”, Italy)
“Engineering and Visualizing Graph Algorithms” (Chair: R. Tamassia)

12:35 – 14:00 Lunch

14:00 – 15:10 Session 12 - Force Directed and Energy-Based Techniques
(Chair: F. Brandenburg)

- 14:00 – 14:20 An Energy Model for Visual Graph Clustering
A. Noack
- 14:20 – 14:40 Simultaneous Graph Drawing: Layout Algorithms and Visualization Schemes
C. Erten, S. Kobourov, V. Le, and A. Navabi
- 14:40 – 14:55 Axis-by-Axis Stress Minimization
Y. Koren and D. Harel
- 14:55 – 15:10 Drawing Graphs with Non-Uniform Nodes Using Potential Fields
J. Chuang, C. Lin, and H. Yen

15:10 – 15:40 Coffee Break

15:40 – 16:20 Session 13 - Surfaces and Diagrams
(Chair: D. R. Wood)

- 15:40 – 16:00 Drawing Area-Proportional Venn and Euler Diagrams
S. Chow and F. Ruskey
- 16:00 – 16:20 Optimal Pants Decompositions and Shortest Homotopic Cycles on an Orientable Surface
É. Colin de Verdière and F. Lazarus

16:20 – 16:30 Closing Remarks



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Accepted Posters

The following posters will be displayed on easels in the area of the conference hall throughout the conference:

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- Degree Navigator™: the Journey of a Visualization Software
G. Jourdan, I. Rival, and N. Zaguia
 - HexGraph: Applying Graph Drawing Algorithms to the Game of Hex
C. Murray, C. Friedrich, and P. Eades
 - GLuskap: Visualization and Manipulation of Graph Drawings in 3D
B. Dyck, J. Joevenazzo, E. Nickle, J. Wilsdon, and S. Wismath
 - Web-linkage Viewer: Drawing Links in the Web based on a Site-oriented Framework
Y. Asano and T. Nishizeki
 - The Puzzle Layout Problem
K. Sugiyama, S. Hong, and A. Maeda
 - Visual Data Mining with ILOG Discovery
G. Sander, B. Haible, and T. Baudel
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