



**GD 2015 - Program**  
23<sup>rd</sup> International Symposium on  
**Graph Drawing and Network Visualization**  
24-26 September 2015 - Los Angeles, CA, USA  
<http://www.csun.edu/gd2015/>

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**Wednesday, September 23, 2015**

<b>18:00</b>	<b>20:00</b>	<b>Welcome reception</b>
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**Thursday, September 24, 2015**

<b>08:50</b>	<b>09:00</b>	<b>Opening</b>
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<b>9:00</b>	<b>10:30</b>	<b>Session 1: Large &amp; Dynamic Graphs - chair: Yifan Hu</b>	
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9:00	9:20	<i>L. Nachmanson, R. Prutkin, B. Lee, N. Henry Riche, A. Holroyd and X. Chen</i> "GraphMaps: Browsing Large Graphs as Interactive Maps"	T2
9:20	9:40	<i>T. Crnovrsanin, J. Chu and K.-L. Ma</i> "An Incremental Layout Method for Visualizing Online Dynamic Graphs" ( <b>best paper of Track 2</b> )	T2
9:40	10:00	<i>H. Meyerhenke, M. Nöllenburg and C. Schulz</i> "Drawing Large Graphs by Multilevel Maxent-Stress Optimization"	T2
10:00	10:15	<i>A. Arleo, W. Didimo, G. Liotta and F. Montecchiani</i> "A Million Edge Drawing for a Fistful of Dollars"	D
10:15	10:30	<i>F. Lipp, A. Wolff and J. Zink</i> "Faster Force-Directed Graph Drawing with the Well-Separated Pair Decomposition"	D

<b>10:30</b>	<b>11:00</b>	<b>Coffee break</b>
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<b>11:00</b>	<b>12:00</b>	<b>Session 2: Invited talk - chair: Anna Lubiw</b>	
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11:00	12:00	<i>H. Edelsbrunner</i> "Shape, Homology, Persistence, and Stability"	
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<b>12:00</b>	<b>14:00</b>	<b>Lunch break</b>
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<b>14:00</b>	<b>15:20</b>	<b>Session 3: Crossing numbers - chair: Alexander Wolff</b>	
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14:00	14:20	<i>M. Schaefer and D. Štefankovič</i> "The Degenerate Crossing Number and Higher-Genus Embeddings"	T1
14:20	14:40	<i>D. Bokal, M. Bračić, M. Derňár and P. Hliněný</i> "On Degree Properties of Crossing-critical Families of Graphs"	T1
14:40	15:00	<i>V. Dujmović, D. Eppstein and D. R. Wood</i> "Genus, Treewidth, and Local Crossing Number"	T1
15:00	15:20	<i>R. Fulek, M. Pelsmajer and M. Schaefer</i> "Hanani-Tutte for Radial Planarity"	T1

<b>15:20</b>	<b>16:00</b>	<b>Poster and Demo Session</b>	
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15:20	15:25	Poster and demo pitch	
15:25	16:00	Poster and demo presentations	

<b>16:00</b>	<b>16:20</b>	<b>Coffee break</b>
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<b>16:20</b>	<b>17:20</b>	<b>Session 4: Experiments - chair: Michael T. Goodrich</b>	
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16:20	16:40	<i>A. Igamberdiev, W. Meulemans and A. Schulz</i> "Drawing Planar Cubic 3-Connected Graphs with Few Segments: Algorithms & Experiments"	T2
16:40	17:00	<i>M. A. Bekos, M. Kaufmann and C. Zielke</i> "The Book Embedding Problem from a SAT-Solving Perspective"	T2
17:00	17:20	<i>U. Rüegg, C. D. Schulze, J. J. Carstens and R. von Hanxleden</i> "Size- and Port-Aware Horizontal Node Coordinate Assignment"	T2

<b>17:30</b>	<b>19:00</b>	<b>Graph Drawing Contest - chair: Maarten Löffler</b>	
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**Friday, September 25, 2015**

<b>Session 5: Area, Bends, Crossings - chair: Patrizio Angelini</b>			
9:00	10:30		
9:00	9:20	<i>T. Biedl and J. M. Schmidt</i> "Small-Area Orthogonal Drawings of 3-Connected Graphs"	T1
9:20	9:40	<i>F. Frati, M. Hoffmann and V. Kusters</i> "Simultaneous Embeddings with Few Bends and Crossings"	T1
9:40	10:00	<i>D. Auber, N. Bonichon, P. Dorbec and C. Pennarun</i> "Rook-drawing for Plane Graphs"	T1
10:00	10:15	<i>I. Kostitsyna, M. Nöllenburg, V. Polishchuk, A. Schulz and D. Strash</i> "On Minimizing Crossings in Storyline Visualizations"	N
10:15	10:30	<i>C. Duncan</i> "Maximizing the Degree of (Geometric) Thickness-t Regular Graphs"	N
<b>10:30</b>	<b>11:00</b>	<b>Coffee break</b>	
<b>Session 6: Invited talk - chair: Emilio Di Giacomo</b>			
11:00	12:00	<i>K.-L. Ma</i> "Emerging Topics in Network Visualization"	
<b>12:00</b>	<b>14:00</b>	<b>Lunch break</b>	
<b>Session 7: Intersection representations - chair: Vida Dujmović</b>			
14:00	15:00		
14:00	14:20	<i>N. H. Mustafa and J. Pach</i> "On the Zarankiewicz Problem for Intersection Hypergraphs"	T1
14:20	14:40	<i>P. Angelini, G. Da Lozzo, G. Di Battista, F. Frati, M. Patrignani and I. Rutter</i> "Intersection-Link Representations of Graphs"	T1
14:40	15:00	<i>J. Klawitter, M. Nöllenburg and T. Ueckerdt</i> "Combinatorial Properties of Triangle-Free Rectangle Arrangements and the Squarability Problem"	T1
<b>15:00</b>	<b>15:05</b>	<b>Short break</b>	
<b>Session 8: Applications - chair: Muhammad Jawaherul Alam</b>			
15:05	16:00		
15:05	15:25	<i>B. Zimmer and A. Kerren</i> "Displaying User Behavior in the Collaborative Graph Visualization System OnGraX"	T2
15:25	15:45	<i>M. J. Bannister, D. A. Brown and D. Eppstein</i> "Confluent Orthogonal Drawings of Syntax Diagrams"	T2
15:45	16:00	<i>W. Didimo, F. Giacchè and F. Montecchiani</i> "Kojaph: Visual Definition and Exploration of Patterns in Graph Databases"	D
<b>16:00</b>	<b>16:20</b>	<b>Coffee break</b>	
<b>Session 9: Drawings with crossings - chair: Marcus Schaefer</b>			
16:20	17:40		
16:20	16:40	<i>C. Binucci, M. Chimani, W. Didimo, M. Gronemann, K. Klein, J. Kratochvíl, F. Montecchiani and I. G. Tollis</i> "2-Layer Fan-planarity: From Caterpillar to Stegosaurus"	T1
16:40	17:00	<i>F. J. Brandenburg, W. Didimo, W. S. Evans, P. Kindermann, G. Liotta and F. Montecchiani</i> "Recognizing and Drawing IC-planar Graphs"	T1
17:00	17:20	<i>J. Kynčl</i> "Simple Realizability of Complete Abstract Topological Graphs Simplified"	T1
17:20	17:40	<i>V. Dujmović</i> "The Utility of Untangling"	T1
<b>17:45</b>	<b>18:45</b>	<b>Business meeting - chair: Giuseppe Liotta</b>	
<b>19:00</b>	<b>21:00</b>	<b>Social Dinner</b>	

T1: Track 1, T2: Track 2, N: Note, D: Demo

**Saturday, September 26, 2015**

<b>9:00</b>		<b>10:15</b>		<b>Session 10: Polygons and convexity - chair: Martin Nöllenburg</b>	
9:00	9:20	<i>O. Aichholzer, T. Biedl, T. Hackl, M. Held, S. Huber, P. Palfrader and B. Vogtenhuber</i> "Representing Directed Trees as Straight Skeletons"		T1	
9:20	9:40	<i>I. G. Marco and K. Knauer</i> "Drawing graphs with vertices and edges in convex position"		T1	
9:40	10:00	<i>M. Balko, J. Cibulka and P. Valtr</i> "Drawing graphs using a small number of obstacles" ( <b>best paper of Track 1</b> )		T1	
10:00	10:15	<i>R. Fulek and R. Radoicic</i> "Vertical Visibility among Parallel Polygons in Three Dimensions"		N	

<b>10:15</b>	<b>10:45</b>	<b>Coffee break</b>			
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<b>10:45</b>		<b>12:00</b>		<b>Session 11: Drawing graphs on point sets - chair: Carla Binucci</b>	
10:45	11:05	<i>W. S. Evans, G. Liotta, H. Meijer and S. Wismath</i> "Alternating Paths and Cycles of Minimum Length"		T1	
11:05	11:25	<i>T. Bruckdorfer, M. Kaufmann, S. Kobourov and S. Pupyrev</i> "On Embeddability of Buses in Point Sets"		T1	
11:25	11:45	<i>P. Angelini, T. Bruckdorfer, M. Kaufmann and T. Mchedlidze</i> "A Universal Point Set for 2-Outerplanar Graphs"		T1	
11:45	12:00	<i>M. Löffler and C. D. Tóth</i> "Linear-size Universal Point Sets for One-bend Drawings"		N	

<b>12:00</b>	<b>14:00</b>	<b>Lunch break</b>			
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<b>14:00</b>		<b>15:20</b>		<b>Session 12: Contact representations - chair: Fabrizio Frati</b>	
14:00	14:20	<i>B. Klemz, M. Nöllenburg and R. Prutkin</i> "Recognizing Weighted Disk Contact Graphs"		T1	
14:20	14:40	<i>C. Bowen, S. Durocher, M. Löffler, A. Rounds, A. Schulz and C. D. Tóth</i> "Realization of simply connected polygonal linkages and recognition of unit disk contact trees"		T1	
14:40	15:00	<i>V. Kusters and B. Speckmann</i> "Towards Characterizing Graphs with a Sliceable Rectangular Dual"		T1	
15:00	15:20	<i>M. J. Alam, T. Bläsius, I. Rutter, T. Ueckerdt and A. Wolff</i> "Pixel and Voxel Representations of Graphs"		T1	

<b>15:20</b>	<b>15:40</b>	<b>Coffee break</b>			
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<b>15:40</b>		<b>16:40</b>		<b>Session 13: User studies - chair: Torsten Ueckerdt</b>	
15:40	16:00	<i>W. Meulemans and A. Schulz</i> "A Tale of Two Communities: Assessing Homophily in Node-Link Diagrams"		T2	
16:00	16:20	<i>P. Eades, S.-H. Hong, K. Klein and A. Nguyen</i> "Shape-based Quality Metrics for Large Graph Visualization"		T2	
16:20	16:40	<i>L. Barth, A. Gemsa, B. Niedermann and M. Nöllenburg</i> "On the Readability of Boundary Labeling"		T2	

<b>16:40</b>	<b>16:50</b>	<b>Closing</b>			
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## Posters

*G. Liotta and F. Montecchiani* “L-Visibility Drawings of IC-planar Graphs”  
*P. Angelini, G. Da Lozzo, G. Di Battista, F. Frati, M. Patrignani and I. Rutter* “On the Relationship between Map Graphs and Clique Planar Graphs”  
*T. Bruckdorfer, M. Kaufmann and S. Leibßle* “PED User Study”  
*D. Arendt* “SVEN: An Alternative Storyline Framework for Dynamic Graph Visualization”  
*M. T. Goodrich, T. Johnson and M. Torres* “Knuthian Drawings of Series-Parallel Flowcharts”  
*S. G. Kobourov, T. Mchedlidze and L. Vonessen* “Gestalt Principles in Graph Drawing”  
*Y. Bahoo, A. Bunt, S. Durocher and S. Mehrpour* “Drawing Graphs Using Body Gestures”  
*Y. Lahoda, J. Castello, H. A. Akitaya, A. Rounds and C. D. Tóth* “Augmenting Planar Straight Line Graphs to 2-Edge-Connectivity”

## Demos

*B. Zimmer and A. Kerren* “Displaying User Behavior in the Collaborative Graph Visualization System OnGraX”  
*D. Arendt* “SVEN: An Alternative Storyline Framework for Dynamic Graph Visualization”  
*L. Nachmanson, R. Prutkin, B. Lee, N. Henry Riche, A. Holroyd and X. Chen* “GraphMaps: Browsing Large Graphs as Interactive Maps”  
*W. Didimo, F. Giacchè and F. Montecchiani* “Kojaph: Visual Definition and Exploration of Patterns in Graph Databases”  
*U. Rüegg, C. D. Schulze, J. J. Carstens and R. von Hanxleden* “Size- and Port-Aware Horizontal Node Coordinate Assignment”  
*F. Lipp, A. Wolff and J. Zink* “Faster Force-Directed Graph Drawing with the Well-Separated Pair Decomposition”