

Table of Contents

Monday 14 August

9:00 - 10:00	Paul Erdős Memorial Lecture Linkage Folding: From Erdős to Proteins <i>Erik D. Demaine</i>	1
10:30 -11:30	Session 1A	
	The Complexity of a Pop-Up Book <i>Ryuhei Uehara and Sachio Teramoto</i>	3
	A Study of Conway’s Thrackle Conjecture <i>Wei Li, Karen Daniels and Konstantin Rybnikov</i>	7
	Curves in the Sand: Algorithmic Drawing <i>Mirela Damian, Erik D. Demaine, Martin L. Demaine, Vida Dujmovic, Dania El-Khechen, Robin Flatland, John Iacono, Stefan Langerman, Henk Meijer, Suneeta Ramaswami, Diane L. Souvaine, Perouz Taslakian and Godfried T. Toussaint</i>	11
	Session 1B	
	An Improved Approximation Factor For the Unit Disk Covering Problem <i>Sada Narayanappa and Petr Vojtechovsky</i>	15
	Experimental Comparison of the Cost of Approximate and Exact Convex Hull Computation in the Plane <i>Jan Tusch and Stefan Schirra</i>	19
	(Approximate) Conic Nearest Neighbors and the Induced Voronoi Diagram <i>Stefan Funke, Theocharis Malamatos, Domagoj Matijevic and Nicola Wolpert</i>	23
1:30-2:30	Session 2A	
	On Planar Path Transformation <i>Md. Kamrul Islam, Selim G. Akl and Henk Meijer</i>	27
	Bounded-Curvature Path Normalization <i>Jonathan Backer and David Kirkpatrick</i>	31
	Shortest Descending Paths through Given Faces <i>Mustaq Ahmed and Anna Lubiw</i>	35
	Session 2B	
	Realization of Degree 10 Minimum Spanning Trees in 3-Space <i>James King</i>	39

1:30 - 2:30	Session 2B (continued)	
	Predicates for Line Transversals in 3D <i>Hazel Everett, Sylvain Lazard, William Lenhart, Jeremy Redburn and Linqiao Zhang</i>	43
	Small Weak Epsilon-Nets in Three Dimensions <i>Maryam Babazadeh and Hamid Zarrabi-Zadeh</i>	47
3:00 - 4:00	Session 3A	
	Two-Guard Art Gallery Problem <i>Junqiang Zhou and Simeon Ntafos</i>	51
	An Optimal Solution to Room Search Problem <i>Binay Bhattacharya, John Z. Zhang, Qiaosheng Shi and Tsunehiko Kameda</i>	55
	On Computing Shortest External Watchman Routes for Convex Polygons <i>Rafa Absar and Sue Whitesides</i>	59
	Session 3B	
	Hamiltonian Cycles in Triangular Grids <i>Valentin Polishchuk, Esther Arkin and Joseph Mitchell</i>	63
	Tight Bounds for Point Recolouring <i>Yurai Núñez and David Rappaport</i>	67
	2D Triangulation Representation Using Stable Catalogs <i>Abdelkrim Mebarki, Luca Castelli Aleardi and Olivier Devillers</i>	71
4:15 - 5:15	Open Problems	
	Open Problems from CCCG 2005 <i>Erik D. Demaine and Joseph O'Rourke</i>	75

Tuesday 15 August

9:00 - 10:00	Session 4A	
	Polygon Reconstruction from Line Cross-Sections <i>Gill Barequet, Craig Gotsman and Avishay Sidlesky</i>	81
	Computing the Tool Path of an Externally Monotone Polygon in Linear Time <i>Prosenjit Bose, David Bremner and Diane L. Souvaine</i>	85
	Optimal Polygon Placement <i>Prosenjit Bose and Jason Morrison</i>	89
	Session 4B	
	On the Maximum Span of Fixed-Angle Chains <i>Nadia Benbernou and Joseph O'Rourke</i>	93

9:00 - 10:00	<p>Session 4B (continued)</p> <p>Local Overlaps In Special Unfoldings Of Convex Polyhedra <i>Brendan Lucier</i> 97</p> <p>Spanning trees across axis-parallel segments <i>Csaba Tóth and Michael Hoffmann</i> 101</p>	
10:30 - 11:30	<p>Session 5A</p> <p>Rotationally Monotone Polygons <i>Prosenjit Bose, Pat Morin, Michiel Smid and Stefanie Wuhrer</i> 105</p> <p>Polygons Flip Finitely: Flaws and a Fix <i>Erik D. Demaine, Blaise Gassend, Joseph O'Rourke and Godfried T. Toussaint</i> 109</p> <p>Characterization of Polygons Searchable by a Boundary 1-Searcher <i>Tsunehiko Kameda, John Z. Zhang and Masafumi Yamashita</i> 113</p> <p>Session 5B</p> <p>Routing with Guaranteed Delivery on Virtual Coordinates <i>Mirela Ben-Chen, Craig Gotsman and Steven Gortler</i> 117</p> <p>Practical and Efficient Geometric Epsilon-Approximations <i>Huseyin Akcan, Hervé Brönnimann and Robert Marini</i> 121</p> <p>Geometric Separator for d-Dimensional Ball Graphs <i>Kevin Wang and Shang-Hua Teng</i> 125</p>	
1:30-2:30	<p>Invited Lecture</p> <p>On Approximate Range Searching - or - Get in Shape; Round is a Good Choice <i>David Mount</i> 129</p>	
3:00 - 4:20	<p>Session 6A</p> <p>On the Smallest Enclosing Information Disk <i>Frank Nielsen and Richard Nock</i> 131</p> <p>Removing Outliers to Minimize Area and Perimeter <i>Rossen Atanassov, Pat Morin and Stefanie Wuhrer</i> 135</p> <p>A Simple Streaming Algorithm for Minimum Enclosing Balls <i>Hamid Zarrabi-Zadeh and Timothy Chan</i> 139</p> <p>On Bipartite Matching under the RMS Distance <i>Jeff M. Phillips and Pankaj K. Agarwal</i> 143</p> <p>Session 6B</p> <p>The PKD-Tree for Orthogonal d-Dimensional Range Search <i>Bradford Nickerson and Qingxiu Shi</i> 147</p> <p>Range-Aggregate Proximity Detection for Design Rule Checking in VLSI Layouts <i>R. Sharathkumar and Prosenjit Gupta</i> 151</p>	

3:00 - 4:20 **Session 6B** (continued)

- K-Nearest Neighbor Search using the Pyramid Technique 155
Bradford Nickerson and Qingxiu Shi
- A Linear Space Data Structure for Orthogonal Range Reporting and Emptiness Queries 159
Yakov Nekrich

Wednesday 16 August

9:00 - 10:00 **Invited Lecture**

- Predicting the Flexibility and Rigidity of Proteins:
Geometry, Combinatorics, Conjectures, and Algorithms 163
Walter Whiteley

10:30-11:30 **Session 7A**

- Computational Euclid 165
Maarten van Emden and Belaid Moa
- Another Paradigm for Geometric Constraints Solving 169
Dominique Michelucci, Sebti Foufou, Loic Lamarque and David Menegaux
- Partitioning a Regular n -gon into $n + 1$ Convex Congruent Pieces
is Impossible, for Sufficiently Large n 173
Dania El-Khechen, Thomas Fevens and John Iacono

Session 7B

- Computing Depth Contours with Graphics Hardware 177
Craig Gotsman and Ian Fischer
- Minimizing the Number of Arcs Linking a Permutation of Points in the Plane 181
Stephane Durocher, Chris Gray and James King
- An $O(n \log n)$ Algorithm for the All-Farthest-Segments Problem
for a Planar Set of Points 185
Asish Mukhopadhyay and R.L. Scot Drysdale