

CCCG 89
Table of Contents

Session: Points and Hyperplanes I

- 1 **The Complexity of Order Types**
J.E. Goodman
- 2 **Convex Hulls of Samples from Spherically Symmetric Distributions**
R.A. Dwyer
- 3 **Bounding the Number of k -faces in Arrangements of Hyperplanes**
K. Fukuda, S. Saito, A. Tamura and T. Tokuyama
- 4 **Combinatorial Face Enumeration in Arrangements and Oriented Matroids**
K. Fukuda, S. Saito and A. Tamura
- 5 **Some Geometric Medians**
J. Gil, W. Steiger and A. Wigderson

Session: Motion Planning I

- 6 **Clamping a Polygon**
D.L. Souvaine and C.J. Van Wyk
- 7 **An Efficient Algorithm for Identifying Objects Using Robot Probes**
K.A. Lyons and D.H. Rappaport
- 8 **Measuring Motion Planning Strategies**
P. Dale, P. Eades, L. Xuemin and N.C. Wormald
- 9 **Shoving a Table Into a Corner**
M. Teichmann

Session: Algebraic and Implementation Issues

- 10 **Improper Intersection of Algebraic Curves**
S.S. Abhyankar, S. Chandrasekar and V. Chandru
- 11 **Divide-and-Conquer in Early Algebraic Topology: The Mayer-Vietoris Exact Homology Sequence Revisited**
A. Saalfeld
- 12 **Rounding Face Lattices in the Plane**
V. Milenkovic
- 13 **Benchmarks for Implementations of Set Operations Algorithms on Polyhedral Solids**
M. Karasick

Session: Points and Hyperplanes II

- 14 **Point Matching Under Affine Transformation**
J.E. Hopcroft and D.P. Huttenlocher
- 15 **Clustering/Hashing Points in the Plane with Maxmin Criteria**
T. Asano, H. Imai and K. Imai

- 16 **On the Absence of Local Characterizations of Minimum Weight Triangulations**
D.G. Kirkpatrick
- 17 **On the Complexity of the Hypogreedy Matching Heuristic for the Euclidean Points in the Plane**
C. Imielinska and B. Kalantari
- 18 **On 1-segment Center Problem**
H. Imai, D.T Lee and C.D. Yang

Session: Motion Planning II

- 19 **Practical Exact Motion Planning of a Class of Robots with Three Degrees of Freedom**
F. Avnaim and J.D. Boissonnat
- 20 **High-Clearance Motion Planning for a Convex Polygon Among Polygonal Obstacles**
L.P. Chew and K. Kedem
- 21 **A Geometrical Approach to Planning Manipulation Tasks in Robotics**
J.-P. Laumond and R. Alami
- 22 **An Optimal Algorithm for Shortest Rectilinear Paths Among Obstacles in the Plane**
J.S. Mitchell

Session: Stabbing and Separation

- 23 **Ordered Stabbing of Pairwise Disjoint Convex Sets in Linear Time**
P. Egyed and R. Wenger
- 24 **Computing Minimal Spanning Covers of Sets**
B. Bhattacharya and G.T. Toussaint
- 25 **Algorithms for Weak and Wide Separation of Sets**
M.E. Houle
- 26 **Conflict Resolution, One-Shot Problem and Air Traffic Control**
A. Inselberg

Session: Metrics and Embeddings

- 27 **Algorithmic and Combinatorial Techniques for Graphs in R^d**
J.W. Jaromczyk
- 28 **On the Placement of Euclidean Trees**
S. Whitesides and R. Zhao
- 29 **Distance Graphs in Euclidean Space**
H. Maehara and M. Homma
- 30 **L^1 Embeddability, Complexity and Multicommodity Flows**
D. Avis and M. Deza
- 31 **Characterization of Metricity Preserving Transforms**
P.P. Das

Session: Motion Planning III

- 32 **Cutting Polygons to Achieve Separability, with Dynamization**
F. Dehne and R. Tamassia

- 33 **Order Models for Motion Planning in Three-Space**
I. Rival and J. Urrutia
- 34 **Translation Separability of Polyhedra**
D. Nussbaum and J.-R. Sack
- 35 **Collision Detection of a Moving Polygon and a Point**
C.A. Wang

Session: Enclosure Problems

- 36 **Optimal Enclosure Problems**
E.A. Arkin, S. Khuller and J.S. Mitchell
- 37 **Rectilinear Hull - Efficient Sets - Convex Hull: Relationship and Algorithms**
D. Chhajed and V. Chandru
- 38 **The Contour Problem for Restricted-Orientation Polygons**
D.L. Souvaine
- 39 **The Superman Problem**
N. Mouawad and T. Shermer

Session: Voronoi Diagrams

- 40 **Two Algorithms for Radial Ordering of Delaunay Triangles**
L. De Floriani and G. Nagy
- 41 **Roundness Algorithms Using the Voronoi Diagrams**
H. Ebara, N. Fukuyama, H. Nakano and Y. Nakanishi
- 42 **Construction of the Voronoi Diagram for Over 10^5 Generators in Single-Precision Arithmetic**
K. Sugihara and M. Iri
- 43 **An Incremental Algorithm for the Farthest Voronoi Diagram**
A. Suzuki
- 44 **General Metrics and Angle Restricted Voronoi Diagrams**
Y.C. Wee, S. Chaiken and D.E. Willard

Session: Polygons

- 45 **Computing External-Furthest Neighbours for a Simple Polygon**
P.K. Agarwal, A Aggarwal, B. Aronov, S.R. Kosaraju, B. Schieber and S. Suri
- 46 **Algorithms for Computing the Center of Area of a Convex Polygon**
M. Diaz and J. O'Rourke
- 47 **The Visibility Graphs of Spiral Polygons**
H. Everett
- 48 **On Vertical Visibility in Arrangements of Segments and the Queue Size in the Bentley-Ottman Line Sweeping Algorithm**
J.Pach and M. Sharir
- 49 **Computing Bushy and Thin Triangulations**
T. Shermer