

# 21<sup>st</sup> European Workshop on Computational Geometry 2005

## Program

### Tuesday, March 8

18:00 - 20:00	<b>Welcome Reception</b> <b>Centrum Kunstlicht in de Kunst - Centre artificial light in art</b> The centre shows works by internationally renowned artists, who let themselves be inspired by artificial light. It is located in the first Philips light bulb factory in downtown Eindhoven.
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### Wednesday, March 9

9:00 - 9:30 Registration open

#### 9:30 - 10:45 **Triangulations and Meshing**

**A Unified Algorithm for Adaptive Spacetime Meshing with Nonlocal Cone Constraints**

Shripad Thite

**Quality Triangulations Made Smaller**

Alper Üngör

**The Relative Neighbourhood Graph is a part of every  $30^\circ$ -Triangulation**

J. Mark Keil, Tzvetalin S. Vassilev

**Bounds on Optimally Triangulating Connected Subsets of the Minimum Weight Convex Partition**

Magdalene Grantson, Christos Lecvopoulos

**Incremental Construction along Space-Filling Curves**

Kevin Buchin

10:45 - 11:15 Coffee break

#### 11:15 - 12:30 **Spanners**

**Region Counting Graphs**

Jean Cardinal, Sébastien Collette, Stefan Langerman

**Homotopic Spanners**

Sergio Cabello, Bojan Mohar, Arjana Žitnik

**Finding the Best Shortcut in a Geometric Network**

Mohammad Farshi, Panos Giannopoulos, Joachim Gudmundsson

**An Exclusion Region for Minimum Dilation Triangulations**

Christian Knauer, Wolfgang Mulzer

**Improved Lower Bound on the Geometric Dilation of Point Sets**

Adrian Dumitrescu, Ansgar Grüne, Günter Rote

12:30 - 14:00 Lunch Break

<b>14:00 - 15:15</b>	<b>Matching</b>
	<p><b>On Computing Fréchet Distance of Two Paths on a Convex Polyhedron</b> Anil Maheshwari, Jiehua Yi</p> <p><b>Semi-Computability of the Fréchet Distance Between Surfaces</b> Helmut Alt, Maïke Buchin</p> <p><b>Matching Surfaces with Characteristic Points</b> Darko Dimitrov, Christian Knauer, Klaus Kriegel</p> <p><b>Approximation Algorithms for the Earth Mover's Distance Under Transformations Using Reference Points</b> Oliver Klein, Remco C. Veltkamp</p> <p><b>Matching Point Sets with respect to the Earth Mover's Distance</b> Sergio Cabello, Panos Giannopoulos, Christian Knauer, Günter Rote</p>
<b>15:15 - 15:45</b>	<b>Coffee Break</b>
<b>15:45 - 16:45</b>	<b>Combinatorial and Discrete Geometry</b>
	<p><b>Abstract Order Type Extension and New Results on the Rectilinear Crossing Number</b> Oswin Aichholzer, Hannes Krasser</p> <p><b>Quadrangulations and 2-Colorations</b> Carmen Cortés, Alberto Márquez, Atsuhiko Nakamoto, Jesús Valenzuela</p> <p><b>Discrete Curvatures and Gauss Maps for Polyhedral Surfaces</b> Lyuba Alboul, Gilberto Echeverría, Marcos Rodrigues</p> <p><b>On the Number of Facets of Three-Dimensional Dirichlet Stereohedra III: Cubic Group</b> Pilar Sabariego, Francisco Santos</p>
<b>17:00 - 18:00</b>	<b>Open Problem Session</b>

## Thursday, March 10

<b>9:00 - 9:30</b>	<b>Registration open</b>
<b>9:30 - 10:45</b>	<b>Pseudo-Triangulations</b>
	<p><b>A Pointed Delaunay Pseudo-Triangulation of a Simple Polygon</b> Günter Rote, André Schulz</p> <p><b>Transforming Spanning Trees and Pseudo-Triangulations</b> Oswin Aichholzer, Franz Aurenhammer, Clemens Huemer, Hannes Krasser</p> <p><b>Pseudo-Tetrahedral Complexes</b> Franz Aurenhammer and Hannes Krasser</p> <p><b>On Pseudo-Convex Decompositions, Partitions, and Coverings</b> Oswin Aichholzer, Clemens Huemer, Sarah Renkl, Bettina Speckmann, Csaba D. Tóth</p> <p><b>Pointed Binary Encompassing Trees: Simple and Optimal</b> Michael Hoffmann, Csaba D. Tóth</p>
<b>10:45 - 11:15</b>	<b>Coffee Break</b>

11:15 - 12:30	<p><b>Approximation and Competitive Algorithms</b></p> <p><b>Approximate Multi-Visibility Map Computation</b> Narcís Coll, Marta Fort, J. Antoni Sellarès</p> <p><b>Approximation Schemes for the Generalized Geometric Problems with Geographic Clustering</b> Corinne Feremans, Alexander Grigoriev</p> <p><b>Approximation Algorithm for the <math>L_1</math>-Fitting Circle Problem</b> Sariel Har-Peled</p> <p><b>Competitive Online Searching for a Ray in the Plane</b> Andrea Eubeler, Rudolf Fleischer, Tom Kamphans, Rolf Klein, Elmar Langetepe, Gerhard Trippen</p> <p><b>On Optimizing Multi-Sequence Functionals for Competitive Analysis</b> Tom Kamphans, Elmar Langetepe</p>
12:30 - 14:00	Lunch Break
14:00 - 15:15	<p><b>Higher-Order Delaunay Triangulations and GIS</b></p> <p><b>Minimizing Local Minima in Terrains with Higher-Order Delaunay Triangulations</b> Thierry de Kok, Marc van Kreveld, Maarten Löffler</p> <p><b>On Properties of Higher-Order Delaunay Graphs with Applications</b> Manuel Abellanas, Prosenjit Bose, Jesús García, Ferran Hurtado, Mariano Nicolás, Pedro A. Ramos</p> <p><b>Constructing Higher-Order Voronoi Diagrams in Parallel</b> Henning Meyerhenke</p> <p><b>Delineating Boundaries for Imprecise Regions</b> Iris Reinbacher, Marc Benkert, Marc van Kreveld, Alexander Wolff</p> <p><b>An Efficient Algorithm for Label Updating in 2PM Model to Avoid a Moving Object</b> Farshad Rostamabadi, Mohammad Ghodsi</p>
15:15 - 15:45	Coffee Break
15:45 - 16:45	<p><b>Implementation Issues and Experimental Research</b></p> <p><b>Exact Analysis of Optimal Configurations in Radii Computations</b> René Brandenburg, Thorsten Theobald</p> <p><b>Boolean Operations on 3D Selective Nef Complexes: Optimized Implementation and Experiments</b> Peter Hachenberger, Lutz Kettner</p> <p><b>Ternary Blending Operations</b> Galina Pasko, Alexander Pasko, Tosiyasu L. Kunii</p> <p><b>Algebraic Study of the Apollonius Circle of Three Ellipses</b> Ioannis Z. Emiris, George M. Tzoumas</p>
17:00 - 18:00	Business Meeting
19:00 - ?	Conference Dinner

## Friday, March 11

9:00 - 9:30 Registration open

### 9:30 - 10:45 Voronoi Diagrams

#### **The Visibility-Voronoi Complex and its Applications**

Ron Wein, Jur P. van den Berg, Dan Halperin

#### **Constructing the City Voronoi Diagram Faster**

Robert Görke, Alexander Wolff

#### **Computing Transportation Voronoi Diagrams in Optimal Time**

Yaron Ostrovsky-Berman

#### **Approximations of 3D Generalized Voronoi Diagrams**

Imma Boada, Narcís Coll, Narcís Madern, J. Antoni Sellarès

#### **Average Case Complexity of Voronoi diagrams of $n$ Sites from the Unit Cube**

Marcin Bienkowski, Valentina Damerow, Friedhelm Meyer auf der Heide, Christian Sohler

10:45 - 11:15 Coffee Break

### 11:15 - 12:30 Miscellaneous Geometry

#### **Lower Bounds for Kinetic Sorting**

Mohammad Ali Abam, Mark de Berg

#### **Uncertainty Envelopes**

Yaron Ostrovsky-Berman, Leo Joskowicz

#### **Covering Point Sets with Two Convex Objects**

J. Miguel Díaz-Báñez, Carlos Seara, J. Antoni Sellarès, Jorge Urrutia, Inma Ventura

#### **Maximum Line-Pair Stabbing Problem and its Variations**

Sebastian Böcker, Veli Mäkinen

#### **The Fastest Way to View a Query Point in Simple Polygons**

Ramtin Khosravi, Mohammad Ghodsi

12:30 - 14:00 Lunch Break

### 14:00 - 15:15 Geometric Networks

#### **The Minimum Area Spanning Tree Problem**

Paz Carmi, Matthew J. Katz

#### **Spanning Trees with Few Crossings in Geometric and Topological Graphs**

Christian Knauer, Étienne Schramm, Andreas Spillner, Alexander Wolff

#### **Bi-Chromatic Minimum Spanning Trees**

Magdalene Grantson, Henk Meijer, David Rappaport

#### **Constructing Interference-Minimal Networks**

Marc Benkert, Joachim Gudmundsson, Herman Haverkort, Alexander Wolff

#### **A Note on Simultaneous Embedding of Planar Graphs**

Emilio Di Giacomo, Giuseppe Liotta