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Towards Geometric Engineering

FCRC'96 Workshop, WACG'96
Philadelphia, PA, May 27-28, 1996
Selected Papers



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Preface

Computational geometry (CG), as a discipline, has been intended to provide algorithmic foundations and analytic tools for geometric problems encountered in many fields of science and engineering. These include computer graphics, solid modeling, robotics, manufacturing, computer vision, astrophysics, geographical information systems, fluid dynamics, computational biology, etc. However, despite the wealth and abundance of literature and research, the intended technology transfer has been slow and limited.

The core of computational geometry can be enriched by new problem domains. At the same time, exposure to various applications will help in making CG more directly relevant. Today, computational geometry is in transition. To narrow the gap between theory and practice, a number of workshops have been organized in the last few years. Continuing the trend, the First ACM Workshop on Applied Computational Geometry (WACG), held as part of the second *Federated Computing Research Conference* (FCRC'96), was intended to bring together theorists and practitioners in computational geometry and related application areas. The main objectives were to identify factors that hinder timely and effective technology transfer and to foster dialogue and collaboration among different communities.

This volume contains invited contributions, state-of-the-art reports, and 12 contributed papers presented at WACG. The contributed papers were selected from a total of 32 submissions on the basis of the quality of the results and their relevance to the theme of the workshop.

We would like to thank Chee Yap for proposing the idea of organizing such a workshop at FCRC'96 and the Computational Geometry Advisory Committee for providing suggestions in the early planning stage. We are grateful to the Program Committee members for reviewing all the submissions. We wish to acknowledge the sponsorship of ACM SIGACT and SIGGRAPH, and additional support from the U.S. Army Research Office and National Science Foundation. Finally, we would like to thank all the speakers, panelists, and authors who contributed to this workshop.

We hope that the effort in organizing this workshop will start a new trend of *geometric engineering* and encourage cross-fertilization among different communities which share the use of geometric algorithms and techniques for applications in sciences, engineering, and computing.

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Contents

Invited Contributions

How Solid is Solid Modeling?	1
<i>Christoph M. Hoffmann</i>	
Robustness Issues in Geometric Algorithms	9
<i>Steven Fortune</i>	
Implementing Geometric Algorithms Robustly	15
<i>Leonidas J. Guibas</i>	
Robustness in Geometric Algorithms	23
<i>Franco P. Preparata</i>	
Applications of Computational Geometry in Mechanical Engineering	25
Design and Manufacture	
<i>Michael J. Pratt</i>	
On Some Applications of Computational Geometry in Manufacturing	37
and Virtual Environments	
<i>Joseph S. B. Mitchell</i>	
Visualizing Geometric Algorithms -- State of the Art	41
<i>David Dobkin</i>	
Geometric Algorithm Visualization, Current Status and Future	45
<i>D. T. Lee</i>	
Position Paper for Panel Discussion	51
<i>Kurt Mehlhorn</i>	
Designing the Computational Geometry Algorithms Library CGAL	53
<i>Mark H. Overmars</i>	
The Computational Geometry Impact Task Force Report:	59
An Executive Summary	
<i>Bernard Chazelle</i>	

Submitted Contributions

Geometric Manipulation of Flexible Ligands	67
<i>Paul W. Finn, Dan Halperin, Lydia E. Kavradi, Jean-Claude Latombe, Rajeev Motwani, Christian Shelton, and Suresh Venkatasubramanian</i>	
Ray-Representation Formalism for Geometric Computations	79
on Protein Solid Models	
<i>Michael G. Prisant</i>	
Column-Based Strip Packing Using Ordered and Compliant Containment	91
<i>Karen Daniels and Victor J. Milenkovic</i>	
Computing a Flattest, Undercut-Free Parting Line for a Convex	109
Polyhedron, with Application to Mold Design	
<i>Jayanth Majhi, Prosenjit Gupta, and Ravi Janardan</i>	
Geometric Problems in Machine Learning	121
<i>David Dobkin and Dimitrios Gunopulos</i>	
Matching Convex Polygons and Polyhedra, Allowing for Occlusion	133
<i>Ronen Basri and David Jacobs</i>	
Stably Placing Piecewise Smooth Objects	149
<i>Chao-Kuei Hung and Doug Ierardi</i>	
A Beam-Tracing Algorithm for Prediction of Indoor Radio Propagation	157
<i>Steven Fortune</i>	
Extracting Geometric Information from Architectural Drawings	167
<i>Brian W. Kernighan and Christopher J. Van Wyk</i>	
Using the Visibility Complex for Radiosity Computation	177
<i>Rachel Orti, Frédo Durand, Stéphane Rivière, and Claude Puech</i>	
The CGAL Kernel: A Basis for Geometric Computation	191
<i>Andreas Fabri, Geert-Jan Giezeman, Lutz Kettner, Stefan Schirra, and Sven Schönherr</i>	
Triangle: Engineering a 2D Quality Mesh Generator and	203
Delaunay Triangulator	
<i>Jonathan Richard Shewchuk</i>	
Author's Index	223