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Nota di contenuto	CONTENTS ; Preface ; Chapter 1 Algebraic Methods in Computer Aided Geometric Design: Theoretical and Practical Applications ; 1. Introduction ; 2. Implicitization and Parametrization Problems ; 3. Applications in CAGD ; 4. Practical Performance of Algebraic Techniques in CAGD References Chapter 2 Constructing Piecewise Algebraic Blending Surfaces ; 1. Introduction ; 2. Notations and Preliminaries ; 3. Direct Method ; 4. Grobner Basis Method ; 5. Wu's Method ; 6. Syzygy Module Method ; 7. Concluding Remark Chapter 3 Rational Curves and Surfaces: Algorithms and Some Applications 1. Introduction ; 2. Algebraic Plane Curves ; 3. Rational Plane Curves ; 4. Parametrization of Rational Plane Curves ; 5. Properness and Inversion ; 6. Reparametrizations of Rational

Plane Curves

7. Real Rational Curves

8. Parametrization of

Rational Surfaces

; 9. Some Applications

; Chapter 4 Panorama of Methods for Exact Implicitization of Algebraic Curves and Surfaces

; 1. Introduction

; 2. Exact Implicitization of Algebraic

Curves

; 3. Resultants

; 4.

Grobner Bases

5. Characteristic Sets

6. Perturbations

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7. Moving Lines Moving Planes Moving Curves and Moving Surfaces

; 8. Multidimensional Newton Formulae and Symmetric Functions

; 9. Eigenvalue Method

; 10. Conclusion

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Chapter 5 Implicitization and Offsetting via Regular Systems

1. Introduction

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Sommario/riassunto

This book contains tutorial surveys and original research contributions in geometric computing, modeling, and reasoning. Highlighting the role of algebraic computation, it covers: surface blending, implicitization, and parametrization; automated deduction with Clifford algebra and in real geometry; and exact geometric computation. Basic techniques, advanced methods, and new findings are presented coherently, with many examples and illustrations. Using this book the reader will easily cross the frontiers of symbolic computation, computer aided geometric design, and automated reasoning. The boo

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