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Descrizione fisica	1 online resource (553 p.)
Collana	The Morgan Kaufmann series in computer graphics
Altri autori (Persone)	GrossMarkus <1963-> PfisterHanspeter
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Soggetti	Computer graphics Three-dimensional display systems
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 475-514) and index.
Nota di contenuto	Front Cover; Point-based Graphics; Copyright Page; About the Editors; Table of Contents; Foreword; Chapter 1. Introduction; 1.1 Overview; 1.2 Book Organization; 1.3 Common Issues and Reoccurring Patterns; 1.4 Acknowledgments; Chapter 2. The Early History Of Point-Based Graphics; 2.1 Sample-based Representations of Geometry; 2.2 Image-order versus Object-order Visibility and Antialiasing; 2.3 The Challenge Posed By Procedural Modeling; 2.4 The Curious Case of Displacement Mapping; 2.5 Points and Micropolygons to the Rescue; 2.6 The Current Renaissance in Point Graphics; Chapter 3. Acquisition 3.1 Acquisition of Point-sampled Geometry3.2 A Practical Low-cost Scanner for Geometry and Appearance; 3.3 Point-based 3D Photography; Chapter 4. Foundations and Representations; 4.1 Surface Reconstruction; 4.2 Moving Least Squares-based Surface Representations; 4.3 Sampling of Point Models; 4.4 Efficient Data Structures; 4.5 Real-time Refinement; Chapter 5. Digital Processing; 5.1 Preprocessing and Filtering of Point Models; 5.2 3D Editing and Painting; 5.3 Shape Modeling; Chapter 6. Rendering; 6.1 Splatting Fundamentals; 6.2 GPU Splatting; 6.3 Ray Tracing of Point Models 6.4 Rendering of Very Large Models6.5 Sequential Point Trees; Chapter

7. Physics-Based Animation; 7.1 Meshless Finite Elements; 7.2 Animation of Fracturing Material; 7.3 Fluid Simulation; Chapter 8. Selected Topics; 8.1 Point-sampled 3D Video; 8.2 Statistical Representations; 8.3 Visualization of Attributed 3D Point Datasets; 8.4 Point Clouds and Brick Maps for Movie Productions; Bibliography; Index; About the CD-ROM

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Sommario/riassunto

The polygon-mesh approach to 3D modeling was a huge advance, but today its limitations are clear. Longer render times for increasingly complex images effectively cap image complexity, or else stretch budgets and schedules to the breaking point. Point-based graphics promises to change all that, and this book explains how. Comprised of contributions from leaders in the development and application of this technology, Point-Based Graphics examines it from all angles, beginning with the way in which the latest photographic and scanning devices have enabled modeling based on true geometry

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