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Nota di contenuto	Discrete Objects and Shapes -- Multiresolution Representation of Shapes Based on Cell Complexes -- Decomposing Digital 3D Shapes Using a Multiresolution Structure -- Optimal Time Computation of the Tangent of a Discrete Curve: Application to the Curvature -- The Discrete Moments of the Circles -- Planes -- Graceful Planes and Thin Tunnel-Free Meshes -- Local Configurations of Digital Hyperplanes -- (n, m)-Cubes and Farey Nets for Naive Planes Understanding -- Surfaces -- A Digital Lighting Function for Strong 26-Surfaces -- Intersection Number of Paths Lying on a Digital Surface and a New Jordan Theorem -- A Topological Method of Surface Representation -- Presentation of the Fundamental Group in Digital Surfaces -- Reconstruction -- Reconstruction in Different Classes of 2D Discrete Sets -- Curve Reconstruction in Arbitrary Dimension and the Traveling Salesman Problem -- Shape-from-Silhouette/Stereo and Its Application to 3-D Digitizer -- Topology -- Set Connections and Discrete Filtering -- Topological Operators on the Topological Graph of Frontiers -- New Notions for Discrete Topology -- A Model for Digital Topology -- Border Map: A Topological Representation for nD Image Analysis -- A Discrete Homotopic Deformable Model Dealing with Objects with Different Local Dimensions -- Distance and Object Recognition -- Unraveling the Thrill of Metric Image Spaces -- Measuring Resemblance

of Complex Patterns -- Tree Representation for Image Matching and Object Recognition -- Thinning -- Ultra-Fast Skeleton Based on an Isotropic Fully Parallel Algorithm -- Directional 3D Thinning Using 8 Subiterations -- Order Independent Homotopic Thinning -- Discretization -- Computable Partial Solids and Voxels Sets -- Convex Hull of Grid Points below a Line or a Convex Curve -- Rounding Voronoi Diagram -- Digitization of Bézier Curves and Patches using Discrete Geometry -- Hausdorff Discretization and Its Comparison to Other Discretization Schemes -- Visualization -- The Discrete Tube: A Spatial Acceleration Technique for Efficient Diffraction Computation -- Polyhedrization of the Boundary of a Voxel Object -- Discrete Ray-Casting -- 3D Discrete Normal Vectors.

Sommario/riassunto

These proceedings contain papers presented at the 8th Discrete Geometry for Computer Imagery conference, held 17-19, March 1999 at ESIEE, Marne-la- Vall ee. The domains of discrete geometry and computer imagery are closely related. Discrete geometry provides both theoretical and algorithmic models for the p- cessing, analysis and synthesis of images; in return computer imagery, in its variety of applications, constitutes a remarkable experimentational eld and is a source of challenging problems. The number of returning participants, the arrival each year of contributions from new laboratories and new researchers, as well as the quality and originality of the results have contributed to the success of the conference and are an - dication of the dynamism of this eld. The DGCI has become one of the major conferences related to this topic, including participating researchers and la- ratories from all over the world. Of the 41 papers received this year, 24 have been selected for presentation and 7 for poster sessions. In addition to these, four invited speakers have contributed to the conference. The site of Marne-la-Vall ee, just 20 min away from Paris, is particularly we- suited to hold the conference. Indeed, as a newly built city, it showcases a great amount of modern creative architecture, whose pure lines and original shapes o er a favorable context for the topic of Geometry.