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Segmentation; 2.3.2 Bilateral Profile-based 3D Face Segmentation
2.4 3D Face Surface Feature Extraction and Matching2.4.1 Holistic 3D Facial Features; 2.4.2 Regional 3D Facial Features; 2.4.3 Point 3D Facial Features; 2.5 Deformation Modeling of 3D Face Surface; Exercises; References; 3 3D Face Surface Analysis and Recognition Based on Facial Curves; 3.1 Introduction; 3.2 Facial Surface Modeling; 3.3 Parametric Representation of Curves; 3.4 Facial Shape Representation Using Radial Curves; 3.5 Shape Space of Open Curves; 3.5.1 Shape Representation; 3.5.2 Geometry of Preshape Space; 3.5.3 Reparametrization Estimation by Using Dynamic Programming
3.5.4 Extension to Facial Surfaces Shape Analysis3.6 The Dense Scalar Field (DSF); 3.7 Statistical Shape Analysis; 3.7.1 Statistics on Manifolds: Karcher Mean; 3.7.2 Learning Statistical Models in Shape Space; 3.8 Applications of Statistical Shape Analysis; 3.8.1 3D Face Restoration; 3.8.2 Hierarchical Organization of Facial Shapes; 3.9 The Iso-geodesic Stripes; 3.9.1 Extraction of Facial Stripes; 3.9.2 Computing Relationships between Facial Stripes; 3.9.3 Face Representation and Matching Using Iso-geodesic Stripes; Exercises; Glossary; References
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5.3.3 Partial Face Matching

Sommario/riassunto

3D Face Modeling, Analysis and Recognition presents methodologies for analyzing shapes of facial surfaces, develops computational tools for analyzing 3D face data, and illustrates them using state-of-the-art applications. The methodologies chosen are based on efficient representations, metrics, comparisons, and classifications of features that are especially relevant in the context of 3D measurements of human faces. These frameworks have a long-term utility in face analysis, taking into account the anticipated improvements in data collection, data storage, processing speeds, and appl
