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Chapter 5: View Representation; 5.1 Introduction; 5.2 Shape Feature Extraction; 5.2.1 Zernike Moments; 5.2.2 Fourier Descriptor; 5.3 The Bag-of-Visual-Features Method; 5.3.1 The Bag-of-Visual-Words; 5.3.2 The Bag-of-Region-Words; 5.4 Learning the Weights for Multiple Views; 5.4.1 K-Partite Graph Reinforcement; 5.4.2 Weight Learning for Multiple Views Using the k-Partite Graph; 5.5 Summary; References; Part III View-Based 3-D Object Comparison

Chapter 6: Multiple-View Distance Metric 6.1 Introduction; 6.2 Fundamental Many-to-Many Distance Measures; 6.3 Bipartite Graph Matching; 6.3.1 View Selection and Weighting; 6.3.2 Bipartite Graph Construction; 6.3.3 Bipartite Graph Matching; 6.4 Statistical Matching; 6.4.1 Adaptive View Clustering; 6.4.2 CCFV; 6.4.2.1 View Clustering and Query Model Training; 6.4.2.2 Positive and Negative Matching Models; 6.4.2.3 Calculation of the Similarity Between Q and O $S(Q,O)$; 6.4.2.4 Analysis of Computational Cost; 6.4.3 Markov Chain; 6.4.4 Gaussian Mixture Model Formulation 6.4.4.1 Conventional GMM Training 6.4.4.2 Generative Adaptation of GMM; 6.4.4.3 Discriminative Adaptation of GMM; 6.4.4.4 Learning the Weights for Multiple GMMs; 6.5 Summary; References; Chapter 7: Learning-Based 3-D Object Retrieval; 7.1 Introduction; 7.2 Learning Optimal Distance Metrics; 7.2.1 Hausdorff Distance Learning; 7.2.2 Learning Bipartite Graph Optimal Matching; 7.3 3-D Object Relevance Estimation via Hypergraph Learning; 7.3.1 Hypergraph and Its Applications; 7.3.2 Learning on Single Hypergraph; 7.3.3 Learning on Multiple Hypergraphs 7.3.4 Learning the Weights for Multiple Hypergraphs

Sommario/riassunto

Content-based 3-D object retrieval has attracted extensive attention recently and has applications in a variety of fields, such as, computer-aided design, tele-medicine, mobile multimedia, virtual reality, and entertainment. The development of efficient and effective content-based 3-D object retrieval techniques has enabled the use of fast 3-D reconstruction and model design. Recent technical progress, such as the development of camera technologies, has made it possible to capture the views of 3-D objects. As a result, view-based 3-D object retrieval has become an essential but challenging res
