1. Record Nr. UNINA9910827761103321 Autore Gao Yue Titolo View-based 3-D object retrieval / / Yue Gao, Qionghai Dai Pubbl/distr/stampa Amsterdam, Netherlands:,: Elsevier,, 2015 ©2015 **ISBN** 0-12-802623-5 0-12-802419-4 Edizione [1st edition] Descrizione fisica 1 online resource (154 p.) Computer Science Reviews and Trends Collana Disciplina 006.37 Soggetti Image processing - Data processing Pattern recognition systems - Quality control Lingua di pubblicazione Inglese **Formato** Materiale a stampa Monografia Livello bibliografico Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references. Nota di contenuto Front Cover; View-Based 3-D Object Retrieval; Copyright; Contents; Acknowledgments; Preface; Part I: The Start; Chapter 1: Introduction; 1.1 The Definition of 3DOR: 1.2 Model-Based 3DOR Versus View-Based 3DOR; 1.3 The Challenges of V3DOR; 1.4 Summary of Our Work; 1.4.1 View Extraction; 1.4.2 Representative View Selection; 1.4.3 Learning the Weights for Multiple Views; 1.4.4 Distance Measures for Object Matching; 1.4.5 Learning the Relevance Among 3-D Objects; 1.5 Structure of This Book; 1.6 Summary; References; Chapter 2: The Benchmark and Evaluation: 2.1 Introduction 2.2 The Standard Benchmarks2.3 The Shape Retrieval Contest; 2.4 Evaluation Criteria in 3DOR; 2.5 Summary; References; Part II View Extraction, Selection, and Representation; Chapter 3: View Extraction; 3.1 Introduction; 3.2 Dense Sampling Viewpoints; 3.3 Predefined Camera Array; 3.4 Generated View; 3.5 Summary; References; Chapter 4: View Selection: 4.1 Introduction: 4.2 Unsupervised View Selection: 4.3 Interactive View Selection; 4.3.1 Multiview 3-D Object Matching; 4.3.2 View Clustering; 4.3.3 Initial Query View Selection; 4.3.4 Interactive View Selection with User Relevance Feedback 4.3.5 Learning a Distance Metric4.3.6 Multiple Query Views Linear

Combination; 4.3.7 The Computational Cost; 4.4 Summary; References; 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 Usingthe k-Partite Graph; 5.5 Summary; References; Part III View-Based 3-D Object Comparison

Chapter 6: Multiple-View Distance Metric6.1 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 Training6.4.4.2 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