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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

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Nota di contenuto	Book Cover; Title; Copyright; Contents; 1 Introduction; 2 Coastal modelling; 3 Conventional modelling techniques for coastal engineering; 4 Finite difference methods; 5 Finite element methods; 6 Soft computing techniques; 7 Artificial neural networks; 8 Fuzzy inference systems; 9 Evolutionary algorithms; 10 Knowledge-based systems; 11 Conclusions; References; Index
Sommario/riassunto	"Mechanistic models are often employed to simulate processes in

coastal environments. However, these predictive tools are highly specialized, involve certain assumptions and limitations, and can be manipulated only by experienced engineers who have a thorough understanding of the underlying principles. This results in significant constraints on their manipulation as well as large gaps in understanding and expectations between the developers and users of a model. Recent advancements in soft computing technologies make it possible to integrate machine learning capabilities into numerical modelling systems in order to bridge the gaps and lessen the demands on human experts. This book reviews the state-of-the-art in conventional coastal modelling as well as in the increasingly popular integration of various artificial intelligence technologies into coastal modelling. Conventional hydrodynamic and water quality modelling techniques comprise finite difference and finite element methods. The novel algorithms and methods include knowledge-based systems, genetic algorithms, artificial neural networks, and fuzzy inference systems. Different soft computing methods contribute towards accurate and reliable prediction of coastal processes. Combining these techniques and harnessing their benefits has the potential to make extremely powerful modelling tools."--Provided by publisher.
