

Distributed Multimedia Databases: Techniques and Applications

Table of Contents

Preface	i
<i>Part I: An Introduction to Multimedia Database</i>	
Chapter 1: Distributed Multimedia Databases	2
Timothy K. Shih, Tamkang University, Taiwan	
<i>Part II: Content-Based Retrieval and Image Database Techniques</i>	
Chapter 2: Bridging the Semantic Gap in Image Retrieval	14
Rong Zhao and William I. Grosky, Wayne State University, USA	
Chapter 3: Content-Based Visual Information Retrieval	37
Oge Marques and Borko Furht, Florida Atlantic University, USA	
Chapter 4: Content-Based Trademark Recognition and Retrieval Based on Discrete Synergetic Neural Network	58
Tong Zhao, Carnegie Mellon University, USA	
H. Lilian Tang, University of Surrey, United Kingdom	
Horace H. S. Ip, City University of Hong Kong, Hong Kong	
Feihu Qi, Shanghai Jiao Tong University, PRC	
Chapter 5: Concepts of Emergence Index in Image Databases	73
Sagarmay Deb and Yanchun Zhang, University of Southern Queensland, Australia	
<i>Part III: Video Database and Video-on-Demand</i>	
Chapter 6: Distributed Temporal Video DBMS Using Vertical Class Partitioning Technique	90
Chi-wai Fung, Vocational Training Council, Hong Kong	
Rynson Lau, City University of Hong Kong, Hong Kong	
Hong Va Leong, The Hong Kong Polytechnic University, Hong Kong	
Qing Li, City University of Hong Kong, Hong Kong	
Antonio Si, Oracle Corporation, USA	
Chapter 7: Video-on-Demand: Scalability and QoS Control	111
Fulu Li, Paragon Networks Corp., Ottawa, Canada	

Chapter 8: Video Abstraction Techniques for a Digital Library	120
Hang-Bong Kang, Catholic University of Korea, Korea	
Chapter 9: Video Database Techniques and Video-on-Demand	133
Jen-Wen Ding, Kun Shan University of Technology, Taiwan	
Yueh-Min Huang and Sheng-Yuan Zeng, National Cheng Kung University, Taiwan	
Cheng-Chung Chu, Tunghai University, Taiwan	
Chapter 10: Broadcasting Approaches for VOD Services	147
Ming-Hour Yang, National Central University, Taiwan	
Yu-Chee Tseng, National Chiao-Tung University, Taiwan	
<i>Part IV: Watermark Techniques</i>	
Chapter 11: Watermarking on Compressed/Uncompressed Video Using Communications with Side Information Mechanism	173
Chun-Shien Lu and Hong-Yuan Mark Liao, Academia Sinica, Taiwan	
Jan-Ru Chen and Kuo-Chin Fan, National Central University, Taiwan	
Chapter 12: Hiding Images Using Dynamic Bit-Replacement and Human Visual System	190
Chin-Chen Chang and Kuo-Feng Hwang, National Chung Cheng University, Taiwan	
Chapter 13: Embedding Robust Gray-Level Watermark in an Image Using Discrete Cosine Transformation	206
Chwei-Shyong Tsai and Chin-Chen Chang, National Chung Cheng University, Taiwan	
Tung-Shou Chen and Ming-Huang Chen, National Taichung Institute of Technology, Taiwan	
<i>Part V: Media Synchronization, Multicast and Quality of Services Techniques</i>	
Chapter 14: Multicast: Concept, Problems, Routing Protocols, Algorithms and QoS Extensions	225
D. Chakraborty, G. Chakraborty, and N. Shiratori, Tohoku University, Japan	
Chapter 15: Multimedia and Multi-Stream Synchronization	246
Fuhua Oscar Lin, Athabasca University, Canada	
Chapter 16: A Simple Prediction Method for Progressive Image Transmission	262
Chin-Chen Chang and Guang-Xue Xiao, National Chung Cheng University, Taiwan	
Tung-Shou Chen, National Taichung Institute of Technology, Taiwan	

Part VI: Case Studies of Multimedia Databases

Chapter 17: A Multimedia Database Supports Internet-Based

English Learning 274

Ying-Hong Wang, Tamkang University, Taiwan

Chapter 18: Case Study: Cairo – A Distributed Image Retrieval

System for Cluster Architectures 293

Odej Kao and Stephan Stapel, Technical University of Clausthal, Germany

Chapter 19: VRML-Based System for a Three-Dimensional

Virtual Museum 306

J. F. Díez Higuera and F. J. Díaz Pernas, University of Valladolid, Spain

Chapter 20: Organizing Multimedia Objects Using a Class

Algebra Database 318

Daniel J. Buchrer, National Chung Cheng University, Taiwan

Chapter 21: Use of the Frame Synchronization Technique to Improve the Visualization

Realism on the Web 327

Jiung-Yao Huang, Tamkang University, Taiwan

Part VII: Future Directions of Multimedia Databases

Chapter 22: Future Multimedia Databases and Research Directions 352

Chin-Chen Chang, National Chung Chang University, Taiwan

Yi-Ping Hung, Academia Sinica, Taiwan

Timothy K. Shih and Ren-Junn Hwang, Tamkang University, Taiwan

About the Authors 362

Index 372