## TABLE OF CONTENTS

### CHAPTER 1  AUTHORING AND PRESENTATION OF MULTIMEDIA INFORMATION

**The Use of SMIL: Multimedia Research Currently Applied on a Global Scale** (Invited Paper)  
Lloyd Rutledge, Lynda Hardman, Jacco van Ossenbruggen,  
(CWI, Netherlands) ................................................................. 1

**Improving SMIL Documents with NCM Facilities**  
Leandro Marques Rodrigues, Rogerio Ferreira Rodrigues, Debora Muchaluat-Saade, Luiz Fernando Gomes Soares (PUC-Rio, Brazil) .......................... 19

**Multidimensional Shape Modeling in Multimedia Applications**  
Valery Adzhiev (University of Aizu, Japan), Anatoly Ossipov  
(Moscow Engineering Physics Institute, Russia),  
Alexander Pasko (University of Aizu, Japan) .................................... 39

**Editing and Processing of MultiView Documents in Cross-Media Publishing**  
Thomas Corte, Jens Deponte, Heinrich Muller  
(University of Dortmund, Germany) .............................................. 61

**Towards a Categorization of Hypermedia Data Models**  
Carlos Miguel Tobar, Ivan Luiz Marques Ricarte  
(University of Campinas, Brazil) .................................................. 79

### CHAPTER 2  INTERACTIVE MULTIMEDIA

**Electronic Commerce of Multimedia Services** (Invited Paper)  
Jaime Delgado, Isabel Gallego, José Polo  
(Universitat Politècnica de Catalunya, Spain) .................................... 97
FORMAL DESIGN OF INTERACTIVE MULTIMEDIA DOCUMENTS AND
AUTOMATIC GENERATION OF JAVA APPLICATIONS
R. Willrich (INE/CTC/UFSC, Brazil), Pierre de Saqui-Sannes,
P. Senac, Michel Diaz (ENSICA, LAAS-CNRS, France) 111

METADATA MANAGEMENT FOR MULTIMEDIA INTERACTIVE
TELELEARNING SYSTEM
Lei Yuan, Ahmed Karmouch (University of Ottawa, Canada) 127

SQL EXTENSION FOR SUPPORTING MULTIMEDIA DATA
Junghwa Lee, Yoohyun Park, Kyongsok Kim
(Pusan National University, Korea) 147

CHAPTER 3 MODEL BASED GRAPHICS, VIDEO, VISION AND
VIRTUAL REALITY

CMC’s 3D VIRTUAL REALITY THEATRE
VR TOURS OF TWO TOMBS DURING THE MYSTERIES OF
EGYPT EXHIBITION (Invited Paper)
George MacDonald, Frank Corcoran (Canadian Museum of civilization),
John Taylor, Pierre Boulanger, Marc Rioux (NRC, Canada) 167

STRATIFICATION APPROACH TO MODELING VIDEO
Tat-Seng Chua, Liping Chen, Mohan Kankanhalli
(National University of Singapore, Singapore) 179

EVENT-DRIVEN VIDEO AND VISUALIZATION
Jeho Nam, Ahmed H. Tewfik (University of Minnesota, USA) 193

MULTIMODAL ANIMATION SYSTEM BASED ON THE MPEG-4 STANDARD
Sumedha Kshirsagar, Marc Escher, Gael Sannier,
Nadia Magnenat-Thalmann (University of Geneva, Switzerland) 215

MODELING METHODS FOR REUSABLE AND INTEROPERABLE VIRTUAL
ENTITIES IN VIRTUAL WORLDS
Michel Soto, Sebastien Allongue (Universite P. et M. Curie, France) 233

CHAPTER 4 INFORMATION MODELING, STORAGE AND
INTEGRATION

MODELING OBJECT CLUSTERING PERFORMANCE FOR
A SPATIAL DATABASE
Fangju Wang (University of Guelph, Canada) 251

MULTI-POOL CACHING IN CONTINUOUS MEDIA SERVER
Chutinet Srinilta (King Mongkut’s Institute of Technology, Thailand),
Alok Choudhary (Northwestern University, USA) 267

IMMEDIATE AND ADVANCE RESOURCE RESERVATIONS
ARCHITECTURE WITH QUALITY OF SERVICE ROUTING AGENTS
Farag Sallabi, Ahmed Karmouch (University of Ottawa, Canada) 283

DISTRIBUTED VIDEO PRODUCTION: TASKS, ARCHITECTURE AND
QoS Provisioning
Ned Ning Ren (University of Toronto, Canada), Raouf Boutaba
(University of Waterloo, Canada), Yasser Rasheed, Alberto Leon-Garcia
(University of Toronto, Canada) 299

CHAPTER 5 TOPOLOGICAL AND GEOMETRIC MODELING

MOTION EDITING USING MULTRESOLUTION FILTERING
Zhiyong Huang (National University of Singapore, Singapore),
Ranon Boulic, Daniel Thalmann (EPFL-DI-LIG, Switzerland) 323

SIMULATION OF POSTOPERATIVE 3D FACIAL MORPHOLOGY
USING PHYSICS-BASED HEAD MODEL
Yoshimitsu Aoki, Shuji Hashimoto (Waseda University, Japan),
Masahiko Terashima, Akihiko Nakashima (Kyusyu University, Japan) 335

MODELING FACIAL EXPRESSIONS BY INTERACTIVE EVOLUTION
Hans-Felix Heimbrecht, Georg Trogeman (Academy of Media Arts,
Germany) 351

3-D HUMAN FACE RECONSTRUCTION AND ANIMATION FOR
CHINESE SPEECH TRAINING IN ORAL DEAF EDUCATION
Jiang Xiaodong, Qiang Qinghua, Jiayue Zhu (Nanjing University, USA) 367
A MINIMALIST APPROACH TO FACIAL RECONSTRUCTION
Meherzad Gotla, Zhiyong Huang
(National University of Singapore, Singapore) 377

CHAPTER 6 INDEXING & RETRIEVAL OF MULTIMEDIA INFORMATION

VIDEO SEGMENTATION USING AN OPPORTUNISTIC APPROACH
Mohamed Ahmed, Ahmed Karmouch (University of Ottawa, Canada) 389

MOTION INSENSITIVE DETECTION OF CUTS AND GRADUAL TRANSITIONS IN DIGITAL VIDEO
Scott Lawrence, Djemel Ziou, Shengrui Wang
(University of Sherbrooke, Canada) 407

IMAGE CLASSIFICATION TECHNIQUES FOR IMAGE RETRIEVAL ON THE WORLD WIDE WEB
N. Abbadieni, D. Ziou, S. Wang, N. Moursli, J-C. Batista
(University of Sherbrooke, Canada), N. Jemmali (Corel Corp., Canada) 421

CUSTOMISABLE IMAGE CATEGORISATION AND RETRIEVAL WITH INTERACTIVE USER INTERFACE
Dezhong Hong, Sumeet Sohan Singh, Yong-Wei Zhu,
Jian-Kang Wu (Kent Ridge Digital Labs, Singapore) 441

CHAPTER 7 DISTRIBUTED MULTIMEDIA, SYSTEMS AND APPLICATIONS

SET OF CRITERIA FOR EVALUATION AND DESIGN OF MULTIMEDIA APPLICATIONS IN INSTRUCTIONAL CONTEXT
Stephane Crozat, Philippe Trigano, Olivier Hu
(Université de Technologie de Compiègne, France) 463

AN APPLICATION FRAMEWORK FOR DISTRIBUTED MULTIMEDIA DEVELOPMENT
Ying-Hong Wang, Chi-Ming Chung, Hong-Zu Lin, Shih-Wei Lin
(TamKang University, Taiwan) 477

MULTIMEDIA TECHNOLOGIES IN EDUCATIONAL PROCESSES: SOME EXAMPLES
Nicoletta Sala (University of Italian Switzerland) 489

CONFERENCE ORGANIZING COMMITTEE 507
TECHNICAL PROGRAM COMMITTEE 508
LIST OF TECHNICAL REVIEWERS 509
AUTHOR INDEX 511