

# **The Seventh International Conference on Distributed Multimedia Systems**

**DMS'2001**

Tamkang University, Taipei, Taiwan  
September 26 – 28, 2001

## **Final Program**

### **Technical Presentations**

#### **International Conference on Distributed Multimedia Systems 1: Distance Learning and Collaborative Software Systems**

Chair: Qun Jin, The University of Aizu, Japan

##### **1. Individualized E-Learning and Multimedia Support for Collaborative Virtual Universities (Invited Paper)**

Qun Jin<sup>1</sup> and Jianhua Ma<sup>2</sup>

<sup>1</sup>The University of Aizu, Japan

<sup>2</sup>Hosei University, Japan

##### **2. Towards a Multimedia Distributed Learning Environment (Invited Paper)**

Peter Holt, Mahmoud Abaza, Wayne Brehaut, Oscar Lin, Goran Jelica, Karen Stauffer,  
Steve Leung, Osama Shata, Karen Stauffer, Harris Wang  
Athabasca University, Canada

##### **3. Design and Analysis of an Agent-based Online Learning System**

Fuhua Lin, Pete Holt

Athabasca University, Canada

##### **4. Internet-based Distance Education: Distance Learning Project at Tamkang University as an Example**

Flora Chia-I Chang, Timothy K. Shih and Yi-Jen Liu

Tamkang University, Taiwan, R.O.C.

### **5. Maintaining Persistent Look-and-Feel for Roaming Student with Mobile Agent in Distance Learning**

An-Hwa Andy Liu, Timothy K. Shih, Lawrence Y. Deng and Rong-Chi Chang  
Tamkang University, Taiwan, R.O.C.

## **International Conference on Distributed Multimedia Systems 2: Adaptive Multimedia Presentations and Adaptive Streaming**

Chair: Peter Holt, Athabasca University, Canada

### **1. An Adaptive Multimedia Presentation Architecture and System**

Chung-Ming Huang, Chi-Kuang Chang, and Tz-Heng Hsu  
National Cheng Kung University, Taiwan, R.O.C.

### **2. Assessment of a Distributed System for Processing Adaptive Multimedia Documents**

Roberta L. Gomes, Eduardo C. da Cunha, Luiz Fernando R.C. Carmo, Luci Pirmez  
Federal University of Rio de Janeiro, Brazil

### **3. An Open RTSP-based Multimedia Presentation System**

Sheng-Tun Li<sup>1</sup>, Ing-Ray Chen<sup>2</sup>, Huang-Chih Hsieh<sup>1</sup>

<sup>1</sup>National Kaohsiung First University of Science and Technology, Taiwan, R.O.C.

<sup>2</sup>Virginia Tech, U.S.A.

### **4. Design of an Alignment System for Synchronized Speech-Text Presentation**

Wei-Ta Chu, Kuo-Tung Shu, Heng-Yow Chen  
National Chi Nan University, Taiwan, R.O.C.

### **5. Web-based Video Database Management: Issues, Mechanisms, and Experimental Development**

Qing Li<sup>1</sup>, Shermann S.M. Chan<sup>1</sup>, Yi Wu<sup>2</sup>, Yueting Zhuang<sup>2</sup>

<sup>1</sup>City University of Hong Kong, China

<sup>2</sup>Zhejiang University, Hangzhou, China

## **International Conference on Distributed Multimedia Systems 3:**

## **Information Coding and Wavelet-based Image Coding**

Chair: Sheng-Tun Li, National Kaohsiung First Univ. of Sci. and Tech., Taiwan

### **1. Optimal Maximal Prefix Coding and Huffman Coding**

Dongyang Long, Weijia Jia

City University of Hong Kong

### **2. An Image Steganographic Scheme Based on Modified Rabin's Public Key Cryptosystem**

Chin-Chen Chang, Ya-Fen Chang

National Chung Cheng University, Taiwan, R.O.C.

### **3. Fractal Image Compression Based on Intra-Block Variance Distribution**

Shin-Si Chen, Chang-Biau Yang, Kuo-Si Huang

National Sun Yat-sen University, Taiwan, R.O.C.

### **4. The Design and Implementation of MPEG-7 Collaboration Annotation Tool (MCAT)**

Wo Chang

National Institute of Standards and Technology, U.S.A.

### **5. QoS Adaptive Streaming Based On The Enhanced MPEG-2 Scaling**

Jeonghwa Yang, Doo-Hyun Kim, Ji-Young Kwak, Sung-Ho Ahn

Electronics and Telecommunications Research Institute, Korea.

## **International Conference on Distributed Multimedia Systems 4: Wireless and Mobile Multimedia**

Chair: Chyi-Ren Dow, Feng Chia University, Taiwan, R.O.C.

### **1. Real-Time Multimedia Delivery Over Wireless Networks**

Huey-Min Sun<sup>1</sup>, Chia-Mei Chen<sup>1</sup>, LihChyun Shu<sup>2</sup>

<sup>1</sup>National Sun-Yat-Sen University, Taiwan, R.O.C.

<sup>2</sup>Chang Jung University, Taiwan, R.O.C.

### **2. Construction of Cellular IP Network for Mobile Multimedia Communication Services**

Ying-Hong Wang, Shih-Wel Lin, Chih-Hsiao Tsai

TamKang University, Taiwan, R.O.C

### **3. An Efficient Multi-Channel Allocation Strategy for Mobile Multimedia Networks**

Chyi-Ren Dow, Jia-Shin Lai, Yu-Feng Hwang, and Jong-Shin Chen  
Feng Chia University, Taiwan, R.O.C.

### **4. Mobility Management in IPv4/IPv6 Interconnected Networks**

Shiao-Li Tsao, Jen-Chi Liu  
Industrial Technology Research, Taiwan, R.O.C.

### **5. The SOT Framework Re-examined**

Chyou-Hwa Chen<sup>1</sup>, Chih-Jen Tseng<sup>2</sup>, Jiun-Yi Liu<sup>1</sup>

<sup>1</sup>National Taiwan University of Science and Technology, Taiwan, R.O.C.

<sup>2</sup>Department of Information and Management, Kuang Wu Institute of Technology

## **International Conference on Distributed Multimedia Systems 5: Visualization Techniques**

Chair: Kenji Ohmori, Hosei University, Japan

### **1. Cellular Structured Spaces for Multimedia (Invited Paper)**

Kenji Ohmori  
Hosei University, Japan

### **2. Representation and Manipulation with Self-explanatory Software Components**

(Invited Paper)  
Rentaro Yoshioka and Nikolay Mirenkov  
University of Aizu, Japan

### **3. Self-explanatory components: a new communication environment**

Nikolay Mirenkov, Tetsuya Hirotoni  
University of Aizu, Japan

### **4. Construction of a Distributed 3-D Multi-User Virtual Space for Applying Natural Humanoid Animation**

Mamoru ENDO, Takami YASUDA, Shigeki YOKOI  
Nagoya University, Japan

## **5. Multi-Agent Framework for Human Motion Animation Control**

Kihyun Kim, Sangwook Kim

Kyungpook National University, Korea

## **6. Using Sampling Techniques for Painterly Rendering**

Jiunn-Shyan Lee, Chung-Ming Wang

National Chung Hsing University, Taiwan, R.O.C.

## **International Conference on Distributed Multimedia Systems 6: Multimedia QoS and Media Streaming**

Chair: Makoto Takizawa, Tokyo Denki University, Japan

### **1. Quality-Based Concurrency Control for Multimedia Objects**

Naokazu Nemoto, Katsuya Tanaka, Makoto Takizawa

Tokyo Denki University, Japan

### **2. Fault-Tolerant Multimedia Communication Networks with QoS-based Checkpoint Protocol**

Shinji Osada, Hiroaki Higaki

Tokyo Denki University, Japan

### **3. SMART: Yet Another File System for Multimedia Streaming**

Jinyoun Park<sup>1</sup>, Youjip Won<sup>1</sup>, Jaideep Srivastava<sup>2</sup>

<sup>1</sup>Hanyang University, Korea

<sup>2</sup>University of Minnesota, USA

### **4. Servicing Continuous Media Streams Based on Dynamic Caching Policy**

Hwa Sei Lee<sup>1</sup>, Yong Woon Park<sup>2</sup>, Ki Dong Chung<sup>3</sup>

<sup>1</sup>Miryang National University, Rep. of Korea

<sup>2</sup>Dong-eui Institute of Technology, Rep. of Korea

<sup>3</sup>Pusan National University, Rep. of Korea

### **5. An Improving VoIP Interleaved Packet Format For ATM Backbone Network**

Wei-Tsong Lee, Chun-Chin Huang

Feng Chia University, Taiwan, R.O.C

## **International Conference on Distributed Multimedia Systems 7: Content-based Retrieval and Watermark Techniques**

Chair: Jun-Wei Hsieh, YuanZe University, Taiwan, R.O.C.

### **1. Speech/Music/Silence and Gender Detection Algorithm**

Hadi Harb , Liming Chen, Jean-yves Auloge

Ecole Centrale De Lyon, France

### **2. Multiple-Person Tracking System for Content Analysis**

Jun-Wei Hsieh<sup>1</sup>, Yea-Shuan Huang<sup>2</sup>, Jiann-Jone Chen<sup>2</sup>

<sup>1</sup>YuanZe University, Taiwan, R.O.C.

<sup>2</sup>Industrial Technology Research Institute, Taiwan, R.O.C.

### **3. An Efficient Block Matching Algorithm Using Adaptive Return Prediction**

Wen-Yen Chen and Yuan-Chen Liu

National Taipei Teachers College, Taiwan, R.O.C.

### **4. A New Cross Search Algorithm for Block Matching Motion Estimation**

Yen-Chieh Ouyang, Jinn-Yuh Sheu, and J. S. Richar Shen

National Chung-Hsing University, Taiwan, R.O.C.

### **5. A (t, n)-threshold Secret Sharing Scheme for Hidden Images Based on a Watermarking Technique**

Chin-Chen Chang and Hsien-Chu Wu

National Chung Cheng University, Taiwan, R. O. C.

## **International Conference on Distributed Multimedia Systems 8: E-Commerce, Pervasive Commerce, and Healthcare Applications**

Chair: Han-Chieh Chao, National Dong Hwa University, Taiwan

### **1. Hacking@Internet - Attack and Defence**

Reen-Cheng Wang, Han-Chieh Chao, and Michelle Kao

National Dong Hwa University, Taiwan

### **2. A Recommendation System over Internet based on User Classification**

Timothy K. Shih<sup>1</sup>, Chuan-Feng Chiu<sup>1</sup>, Hui-Huang Hsu<sup>2</sup>, Jianhua Ma<sup>3</sup>, Che-Yu Yang<sup>1</sup>

<sup>1</sup>Tamkang University, Taiwan, R.O.C.

<sup>2</sup>Chinese Culture University, Taiwan, R.O.C.

<sup>3</sup>Hosei University, Japan.

### **3. A Practical Anonymous Payment Scheme for Electronic Commerce**

Wen-Shenq Juang<sup>1</sup>, Orng-Twu Liaw<sup>1</sup>, Chin-Laung Lei<sup>2</sup>

<sup>1</sup>Shih Hsin University, Taiwan, R.O.C.

<sup>2</sup>National Taiwan University, Taiwan, R.O.C.

### **4. M-Commerce Based on Active Server**

Timothy K. Shih<sup>1</sup>, Lun-Ping Hung<sup>1</sup>, Sheng-Hua Shiau<sup>1</sup>, Hui-Huang Hsu<sup>2</sup>, An-Hwa Andy Liou<sup>1</sup>

<sup>1</sup>Tamkang University, Tamsui, Taiwan, R.O.C.

<sup>2</sup>Chinese Culture University, Taiwan, R.O.C.,

### **5. A Secure Remote Access Framework for Home Healthcare Applications**

Atsushi Kara

The University of Aizu, Japan

## **International Conference on Distributed Multimedia Systems: Special Session on Multimedia Database Systems**

Chair: Qing Li, City U. of Hong Kong, Hong Kong

### **1. Semantic Image Retrieval by Color Keywords (Invited Paper)**

Kent K.T. Cheung and Horace H.S. Ip

City University of Hong Kong, Hong Kong

### **2. Visual Keywords-Driven Image Retrieval Based on Synergetic Neural Network**

Tong Zhao<sup>1</sup>, Horace H. S. Ip<sup>2</sup>, and Feihu Qi<sup>3</sup>

<sup>1</sup>Carnegie Mellon University, USA

<sup>2</sup>City University of Hong Kong, HK

<sup>3</sup>Shanghai Jiao Tong University, PRC

### **3. Modeling WWW-Traffic Data by Autocorrelations**

Ming Li<sup>1</sup>, Weijia Jia<sup>1</sup> and Wei Zhao<sup>2</sup>

<sup>1</sup>City University of Hong Kong, Hong Kong

<sup>2</sup>Texas A&M University, College Station, USA

#### **4. An Approach to Semantics-based Image Retrieval and Browsing**

Jun Yang<sup>1</sup>, Liu Wenyin<sup>2</sup>, Hongjiang Zhang<sup>2</sup>, Yueting Zhuang<sup>1</sup>

<sup>1</sup>Zhejiang University, China

<sup>2</sup>Microsoft Research China, China

#### **5. Investigating the stability of colour-histogram feature-extraction under a non-domain specific distance metric**

David Eyers and John Shepherd

University of New South Wales, Australia

#### **6. Developing Resolution-Based Multi-Media Domains to Aid Data Retrieval**

Wilfred Ng<sup>1</sup> and H. V. Leong<sup>2</sup>

<sup>1</sup>The Hong Kong University of Science and Technology, Hong Kong

<sup>2</sup>Hong Kong Polytechnic University, Hong Kong

### **International Conference on Distributed Multimedia Systems: Special Session on E-Commerce**

Chair: Sheng-Tun Li, N. Kaohsiung 1st U. of Sci. & Tech., Taiwan

#### **1. Design and Implementation of an Agent-based Electronic Commerce, Pmart**

Mokdong Chung, Mansoo Kim

Pukyong National University, Korea

#### **2. XML-based Document Management for Customer Responses in E-Commerce**

Sung-shun Weng, Pey-Jun Tsai

Fu-Jen Catholic University, Taiwan, R.O.C.

#### **3. Virtual Tour Guide System with Best Shortcut Application for Electronic Commerce**

Chi Ming Chen, Yuan Liang Wang, Ming Hsien Lin, Tsuan Yu Huang, Chan Peng Chang, HSu Dong Wang, Wen Kwei Chen

Aletheia University, Matou Campus, Taiwan, R.O.C.

### **International Conference on Distributed Multimedia Systems: Special Session on Multimedia and the XML Standard**

Chair: Athena Vakali, Aristotle University, Greece

### **1. XML Messaging**

Petri Vuorimaa and Tamas Heiszter

Helsinki University of Technology, Finland

### **2. Extending XHTML for Multimedia Presentations**

SooCheol Lee and EenJun Hwang

Ajou University, Korea

### **3. The MPEG-7 Multimedia Content Description Standard and the XML Schema Language**

E. Terzi, A. Vakali, J. Fan and M-S. Hacid

Purdue University, USA

### **4. SMIL in X-SMILES**

Kari Pihkala, Niklas von Knorring, and Petri Vuorimaa

Helsinki University of Technology, Finland

## **Poster Presentations**

### **Multimedia Technologies and Systems**

Session Chair: Kuei-Ping Shih, Tamkang University, Taiwan, R.O.C.

#### **1. Two Stages Content-Based Retrieval for Music Collections**

Chin-Chen Chang<sup>1</sup>, Po-Wen Lu<sup>1</sup>, and Ju-Yuan Hsiao<sup>2</sup>

<sup>1</sup>National Chung Cheng University, Taiwan, R.O.C.

<sup>2</sup>National Changhua University of Education, Taiwan, R.O.C.

#### **2. A Dublin Code Based Personal Information Agent**

Hsing-Tai Chung, Antonia Ho, Claud Yu

Tamkang University, Taiwan, R.O.C.

#### **3. Stirmark Attack Resistant Fractal Transform-based Information Hiding**

Yun Q. Shi, Zhicheng Ni and Nirwan Ansari

New Jersey Institute of Technology, USA

#### **4. An Approach for Generating Artistic Painting Style Images**

Hidenori ITOH<sup>1,4,5</sup>, Tokuhiro NOMA<sup>1</sup>, Tsuyoshi NAKAMURA<sup>1</sup>, He Lifeng<sup>2</sup>, Koji OHNISHI<sup>3</sup>, Kenichi NISHIZAWA<sup>3</sup>, Hirohisa KOMANOME<sup>3</sup>, Yoshinori NIWA<sup>4,6</sup>, Kazuhiko YAMAMOTO<sup>4,5,7</sup>, Mamoru YASUMOTO<sup>4,5</sup>, Hitoshi HONGO<sup>4,5</sup>, and Masafumi TOMINAGA<sup>4,5</sup>

<sup>1</sup>Nagoya Institute of Technology, Japan

<sup>2</sup>Aichi Prefectural University, Japan

<sup>3</sup>Ikegami Tsushinki Co.,Ltd., Japan

<sup>4</sup>Japan Science and Technology Corporation, Japan

<sup>5</sup>Human and Object Interaction Processing, Japan

<sup>6</sup>Softopia Japan

<sup>7</sup>Gifu University

#### **5. A Prompt contour detection method**

Hwen-Jen Lin, Yang-Ta Kao

Tamkang University, Taiwan, R.O.C.

#### **6. A Public-Key Image Hiding Scheme Using DCT and Vector Quantization Coding**

Wen-Yuan Chen and Chin-Hsing Chen

National Cheng Kung University, Taiwan, R.O.C.

#### **7. A New Image Compression Method Based on Block Truncation Coding and Edge Detection**

Chin-Chen Chang<sup>1</sup>, Tung-Shou Chen<sup>2</sup>, and Yi Lin<sup>1</sup>

<sup>1</sup>National Chung Cheng University, Taiwan, R.O.C.

<sup>2</sup>National Taichung Institute of Technology, Taiwan, R.O.C.

#### **8. The Conversion from ER Model to XML DTD**

Yuan-Kai Wang<sup>1</sup>, Ying-Hong Wang<sup>2</sup> and Show-Ping Lin<sup>2</sup>

<sup>1</sup>Catholic Fu Jen University, R.O.C.

<sup>2</sup>TamKang University, Taiwan, R.O.C.

#### **9. A Novel VQ-Based Compression Method without Having the Phenomenon of Ragged Edges**

Kuo-Lung Hung, Chin-Chen Chang

National Chung Cheng University, Taiwan, R.O.C.

## **10. Image-based Volume Rendering**

XU Dongrong

Johns Hopkins University, USA

## **11. Rotation-Invariant Texture Classification Using A Two-Stage Wavelet Packet Feature Approach**

Chi-Man Pun<sup>1</sup>, Moon-chuen Lee<sup>2</sup>

<sup>1</sup>University of Macau

<sup>2</sup>The Chinese University of Hong Kong, Hong Kong

## **12. An Algorithm for Simulating the Origin of Japanese Hiragana Character base on Polygon Morphing**

Sun Huijun<sup>1</sup>, He lifeng<sup>2</sup>, Nakamura Tsuyoshi<sup>1</sup>, Itoh Hidenori<sup>1</sup>

<sup>1</sup>Nagoya Institute of Technology, Japan

<sup>2</sup>Aichi Prefectural University, Japan

## **13. Generation of artistic calligraphic fonts based on character structures and its evaluation**

Koji Yamada<sup>1</sup>, Tsuyoshi Nakamura<sup>1</sup>, Hidenori Itoh<sup>1</sup>, and Lifeng HE<sup>2</sup>

<sup>1</sup>Nagoya Institute of Technology, Japan

<sup>2</sup>Aichi Prefectural University, Japan

## **Multimedia Applications**

Session Chair: Kuei-Ping Shih, Tamkang University, Taiwan, R.O.C.

### **1. MPEG-4 Contents Authoring and Play System based on Temporal Constraint**

Kyungae Cha, Heesun Kim, Sangwook Kim

Kyungpook National University, Korea

### **2. A SMIL-based Lesson Recording System for Distance Learning**

Chun-Chuan Yang, Yi-Zheng Yang, Kwin-Yee Lin

National Chi Nan University, Taiwan, R.O.C.

### **3. Internet-based Distance Education: an Agent-based Distance Learning Project at Tamkang University as an Example**

Flora Chia-I Chang<sup>1</sup>, Te-Hua Wang<sup>2</sup>, Yu-Wei Chan<sup>2</sup>, Lawrence Y. Deng<sup>2</sup>, I-Chen Lee<sup>1</sup>

and Ya-Hui Wang<sup>1</sup>

<sup>1</sup> Graduate Institute of Educational Policy and Leadership, Tamkang University,  
Tamsui Taiwan 251, R.O.C.

<sup>2</sup> Department of Computer Science and Information Engineering Tamkang University,  
Tamsui Taiwan 251, R.O.C.

#### **4. Disjoint Web Document Clustering and Management in Electronic Commerce**

Mei-Ling Shyu<sup>1</sup>, Shu-Ching Chen<sup>2</sup>, Choochart Haruechaiyasak<sup>1</sup>, Chi-Min Shu<sup>3</sup>,  
Sheng-Tun Li<sup>4</sup>

<sup>1</sup>University of Miami,, U.S.A.

<sup>2</sup>Florida International University, U.S.A.

<sup>3</sup>National Yunlin University of Science and Technology, Taiwan, R.O.C.

<sup>4</sup>National Kaohsiung First University of Science and Technology, Taiwan, R.O.C.

### **Distributed Computing, Network Protocols, and Applications**

Session Chair: Kuei-Ping Shih, Tamkang University, Taiwan, R.O.C.

#### **1. B&W Call Admission Control in ATM Networks**

Lain-Chyr Hwang<sup>1</sup>, Cheng-Yuan Ku<sup>2</sup>, Steen J. Hsu<sup>1</sup>, Yu-Fen Chung<sup>1</sup>

<sup>1</sup>I-Shou University, Taiwan, R.O.C.

<sup>2</sup>National Chung Cheng University, Taiwan, R.O.C.

#### **2. Forensic Computing System for Digital Rights Management on Distributed Multimedia Environment**

Chul Hwang, Dae-Joon Hwang

SungKyunKwan University, Korea

#### **3. An Architecture-neutral Approach to Web-based Synchronized Multimedia Presentations with RTP Video Streams**

Sheng-Tun Li, Hung-Chi Chen

National Kaohsiung First University of Science and Technology, Taiwan, R.O.C.

#### **4. An USB-Based Surveillance System over Wireless Network**

Hsu-Min Chen, Sheng-Yao Zhuo, Chih-Yuan Huang, Tei-Wei Kuo

National Taiwan University, Taiwan, R.O.C.

#### **5. Distributed Multimedia Application for Integrated Scientific Simulation and**

## **Visualization**

T. Andrew Yang<sup>1</sup>, Yiming Sun<sup>2</sup>

<sup>1</sup>Indiana University of Pennsylvania, USA

<sup>2</sup>Bombardier Transportation, Pittsburgh, Pennsylvania 15122, U.S.A.

## **6. A New Media Caching Scheme in Video Servers**

Il-Myung Yim<sup>1</sup>, Hyun-Gyoo Yook<sup>1</sup>, Sung-Soon Park<sup>2</sup>, Myong-soon Park<sup>1</sup>

<sup>1</sup>Korea University, Korea

<sup>2</sup>Anyang University, Korea

## **7. A Multiple Proxy Blind Threshold Signature Scheme**

Whe Dar Lin<sup>1,2</sup>, Jinn-Ke Jan<sup>2</sup>

<sup>1</sup>The Overseas Chinese Institute of Technology, Taiwan, R.O.C

<sup>2</sup>National Chung Hsing University, Taiwan, R.O.C.

## **8. An Upper Bound on the Average Probability of an Undetected Error for the Ensemble of Binary Expansions of Concatenated Codes with Generalized Reed-Solomon Outer Codes**

Toshihisa Nishijima

Hosei University, Japan