

Table of Contents

PANEL I: Image and Video Analysis: Ready to Allow Full Exploitation of MPEG Services?	1
<i>Chairman: Thomas Sikora (Technische Univ., Berlin, Germany)</i>	
What Can Video Analysis Do for MPEG Standards?	3
<i>A. Murat Tekalp</i>	
PANEL II: Content Adaptation	7
<i>Chairman: Fernando Pereira (Instituto Superior Técnico, Portugal)</i>	
Content Adaptation: The Panacea for Usage Diversity?	9
<i>Fernando Pereira</i>	
Towards Semantic Universal Multimedia Access	13
<i>John R. Smith</i>	
Transcoding, Scalable Coding, and Standardized Metadata	15
<i>Anthony Vetro</i>	
PANEL III: Video Coding: Present and Future	17
<i>Chairman: Ralf Schäfer (Heinrich-Hertz-Institut, Germany)</i>	
Panel Position Notes – Video Coding: Present and Future	19
<i>Kiyoharu Aizawa</i>	
SESSION A	
Template-Based Eye and Mouth Detection for 3D Video Conferencing . . .	23
<i>Jürgen Rurainsky, Peter Eisert</i>	
Face Recognition for Video Indexing: Randomization of Face Templates Improves Robustness to Facial Expression	32
<i>Simon Clippindale, Mahito Fujii</i>	
Simple 1D Discrete Hidden Markov Models for Face Recognition	41
<i>Hung-Son Le, Haibo Li</i>	
Tracking a Planar Patch by Additive Image Registration	50
<i>José Miguel Buenaposada, Enrique Muñoz, Luis Baumela</i>	
Diatom Screening and Classification by Shape Analysis	58
<i>M. Forero-Vargas, R. Redondo, G. Cristobal</i>	
Combining MPEG-7 Based Visual Experts For Reaching Semantics	66
<i>Medeni Soysal, A. Aydın Alatan</i>	

Depth-Based Indexing and Retrieval of Photographic Images	76
<i>László Czúni, Dezso Csordás</i>	
Stochastic Models of Video Structure for Program Genre Detection	84
<i>Cuneyt M. Taskiran, Ilya Pollak, Charles A. Bouman, Edward J. Delp</i>	
1-D Mosaics as a Tool for Structuring and Navigation in Digital Video Content	93
<i>W. Dupuy, J. Benois-Pineau, D. Barba</i>	
Summarizing Video: Content, Features, and HMM Topologies	101
<i>Yagiz Yasaroglu, A. Aydin Alatan</i>	
Automatic Generation of Personalized Video Summary Based on Context Flow and Distinctive Events	111
<i>Hisashi Miyamori</i>	
Multi-criteria Optimization for Scalable Bitstreams	122
<i>Sam Lerouge, Peter Lambert, Rik Van de Walle</i>	
Real-Time Audiovisual Feature Extraction for Online Service Provision over DVB Streams	131
<i>Jesús Bescós, José M. Martínez, Narciso García</i>	
MPEG-4-Based Automatic Fine Granularity Personalization of Broadcast Multimedia Content	139
<i>Avni Rambhia, Jiangtao Wen, Spencer Cheng</i>	
A Way of Multiplexing TV-Anytime Metadata and AV Contents to Provide Personalized Services in Digital Broadcasting	148
<i>Young-tae Kim, Seung-Jun Yang, Hyun Sung Chang, Kyeongok Kang</i>	
Automatic Videoconference Objects Watermarking Using Object Adapted Qualified Significant Wavelet Trees	156
<i>Paraskevi K. Tzouveli, Klimis S. Ntalianis, Stefanos D. Kollias</i>	
A New Self-Recovery Technique for Image Authentication	164
<i>Roberto Caldelli, Franco Bartolini, Vito Cappellini, Alessandro Piva, Mauro Barni</i>	
Video Denoising Using Multiple Class Averaging with Multiresolution . . .	172
<i>Vladimir Zlokolica, Aleksandra Pizurica, Wilfried Philips</i>	
Multi-resolution Mosaic Construction Using Resolution Maps	180
<i>Cheong-Woo Lee, Seong-Dae Kim</i>	
A Method for Simultaneous Outlier Rejection in Image Super-Resolution	188
<i>Mejdi Trimeche, Jukka Yrjänäinen</i>	

SESSION B

Lossless Coding Using Predictors and Arithmetic Code Optimized for Each Image	199
<i>Ichiro Matsuda, Noriyuki Shirai, Susumu Itoh</i>	
On Optimality of Context Modeling for Bit-Plane Entropy Coding in the JPEG2000 Standard	208
<i>Alexandre Krivoulets, Xiaolin Wu, Søren Forchhammer</i>	
Tile-Based Transport of JPEG 2000 Images	217
<i>Michael Gormish, Serene Banerjee</i>	
Efficient Method for Half-Pixel Block Motion Estimation Using Block Differentials	225
<i>Tuukka Toivonen, Janne Heikkilä</i>	
Motion Vector Estimation and Encoding for Motion Compensated DWT	233
<i>Marco Cagnazzo, Valéry Valentin, Marc Antonini, Michel Barlaud</i>	
Video Coding with Lifted Wavelet Transforms and Frame-Adaptive Motion Compensation	243
<i>Markus Flierl</i>	
Design Options on the Development of a New Tree-Based Wavelet Image Coder	252
<i>Jose Oliver, M.P. Malumbres</i>	
On Content-Based Very Low Bitrate Video Coding	260
<i>D. Furman, M. Porat</i>	
A Real-Time N-Descriptions Video Coding Architecture	267
<i>Nicola Franchi, Marco Fumagalli, Rosa Lancini</i>	
A New Approach for Error Resilience in Video Transmission Using ECC	275
<i>Bing Du, Anthony Maeder, Miles Moody</i>	
Improved Error Concealment Using Scene Information	283
<i>Ye-Kui Wang, Miska M. Hannuksela, Kerem Caglar, Moncef Gabbouj</i>	
Error Resilient Video Coding Using Unequally Protected Key Pictures ...	290
<i>Ye-Kui Wang, Miska M. Hannuksela, Moncef Gabbouj</i>	
Online Gaming and Emotion Representation	298
<i>A. Raouzaïou, K. Karpouzis, S. Kollias</i>	

XII Table of Contents

Reconstructing 3D City Models by Merging Ground-Based and Airborne Views	306
<i>Christian Frueh, Avideh Zakhor</i>	
Extraction of 3D Structure from Video Sequences	314
<i>Fernando Jaureguizar, José Ignacio Ronda, José Manuel Menéndez</i>	
A Scalable and Modular Solution for Virtual View Creation in Image-Based Rendering Systems	323
<i>Eddie Cooke, Peter Kauff, Oliver Schreer</i>	
Directly Invertible Nonlinear Divisive Normalization Pyramid for Image Representation	331
<i>Roberto Valerio, Eero P. Simoncelli, Rafael Navarro</i>	
Image Cube Trajectory Analysis for Concentric Mosaics	341
<i>Ingo Feldmann, Peter Kauff, Peter Eisert</i>	
Author Index	351