

# Table of Contents

## 3D Scene Modeling

|                                                                                                                          |    |
|--------------------------------------------------------------------------------------------------------------------------|----|
| Error Analysis of Feature Based Disparity Estimation . . . . .                                                           | 1  |
| <i>Patrick A. Mikulastik, Hellward Broszio, Thorsten Thormählen, and Onay Urfalioglu</i>                                 |    |
| Collinearity and Coplanarity Constraints for Structure from Motion . . . .                                               | 13 |
| <i>Gang Liu, Reinhard Klette, and Bodo Rosenhahn</i>                                                                     |    |
| Reconstruction of Building Models with Curvilinear Boundaries<br>from Laser Scanner and Aerial Imagery . . . . .         | 24 |
| <i>Liang-Chien Chen, Tee-Ann Teo, Chi-Heng Hsieh, and Jiann-Yeou Rau</i>                                                 |    |
| The Generation of 3D Tree Models by the Integration of Multi-sensor<br>Data . . . . .                                    | 34 |
| <i>Liang-Chien Chen, Tee-Ann Teo, and Tsai-Wei Chiang</i>                                                                |    |
| LOD Generation for 3D Polyhedral Building Model . . . . .                                                                | 44 |
| <i>Jiann-Yeou Rau, Liang-Chien Chen, Fuan Tsai, Kuo-Hsin Hsiao, and Wei-Chen Hsu</i>                                     |    |
| Octree Subdivision Using Coplanar Criterion for Hierarchical Point<br>Simplification . . . . .                           | 54 |
| <i>Pai-Feng Lee, Chien-Hsing Chiang, Juin-Ling Tseng, Bin-Shyan Jong, and Tsong-Wuu Lin</i>                              |    |
| Dimension Reduction in 3D Gesture Recognition Using Meshless<br>Parameterization . . . . .                               | 64 |
| <i>Yunli Lee, Dongwuk Kyoung, Eunjung Han, and Keechul Jung</i>                                                          |    |
| Target Calibration and Tracking Using Conformal Geometric<br>Algebra . . . . .                                           | 74 |
| <i>Yilan Zhao, Robert Valkenburg, Reinhard Klette, and Bodo Rosenhahn</i>                                                |    |
| Robust Pose Estimation with 3D Textured Models . . . . .                                                                 | 84 |
| <i>Juergen Gall, Bodo Rosenhahn, and Hans-Peter Seidel</i>                                                               |    |
| Multi-scale 3D-Modeling . . . . .                                                                                        | 96 |
| <i>Karsten Scheibe, Michael Suppa, Heiko Hirschmüller, Bernhard Strackebrock, Fay Huang, Rui Liu, and Gerd Hirzinger</i> |    |

## Image Analysis

|                                                                                                                    |     |
|--------------------------------------------------------------------------------------------------------------------|-----|
| Boundary Based Orientation of Polygonal Shapes .....                                                               | 108 |
| <i>Joviša Žunić</i>                                                                                                |     |
| LPP and LPP Mixtures for Graph Spectral Clustering .....                                                           | 118 |
| <i>Bin Luo and Sibao Chen</i>                                                                                      |     |
| The Invariance Properties of Chromatic Characteristics .....                                                       | 128 |
| <i>Yun-Chung Chung, Shyang-Lih Chang, Shen Cherng, and<br/>Sei-Wang Chen</i>                                       |     |
| A Scale Invariant Surface Curvature Estimator .....                                                                | 138 |
| <i>John Rugis and Reinhard Klette</i>                                                                              |     |
| N-Point Hough Transform Derived by Geometric Duality .....                                                         | 148 |
| <i>Yoshihiko Mochizuki, Akihiko Torii, and Atsushi Imiya</i>                                                       |     |
| Guided Importance Sampling Based Particle Filtering for Visual<br>Tracking .....                                   | 158 |
| <i>Kazuhiko Kawamoto</i>                                                                                           |     |
| Intelligent Spot Detection for 2-DE Gel Image .....                                                                | 168 |
| <i>Yi-Sheng Liu, Shu-Yuan Chen, Ya-Ting Chao, Ru-Sheng Liu,<br/>Yuan-Ching Tsai, and Jaw-Shu Hsieh</i>             |     |
| Gaze Estimation from Low Resolution Images .....                                                                   | 178 |
| <i>Yasuhiro Ono, Takahiro Okabe, and Yoichi Sato</i>                                                               |     |
| Image Similarity Comparison Using Dual-Tree Wavelet Transform .....                                                | 189 |
| <i>Mong-Shu Lee, Li-yu Liu, and Fu-Sen Lin</i>                                                                     |     |
| A Novel Supervised Dimensionality Reduction Algorithm for Online<br>Image Recognition .....                        | 198 |
| <i>Fengxi Song, David Zhang, Qinglong Chen, and Jingyu Yang</i>                                                    |     |
| Feature Selection Based on Run Covering .....                                                                      | 208 |
| <i>Su Yang, Jianning Liang, Yuanyuan Wang, and Adam Winstanley</i>                                                 |     |
| Automated Detection of the Left Ventricle from 4D MR Images:<br>Validation Using Large Clinical Datasets .....     | 218 |
| <i>Xiang Lin, Brett Cowan, and Alistair Young</i>                                                                  |     |
| Two Thresholding for Deriving the Bi-level Document Image .....                                                    | 228 |
| <i>Yu-Kung Chen and Yi-Fan Chang</i>                                                                               |     |
| A Novel Merging Criterion Incorporating Boundary Smoothness<br>and Region Homogeneity for Image Segmentation ..... | 238 |
| <i>Zhi-Gang Tan, Xiao-Chen He, and Nelson H.C. Yung</i>                                                            |     |

|                                                                                                                                              |     |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----|
| A New Local-Feature Framework for Scale-Invariant Detection<br>of Partially Occluded Objects .....                                           | 248 |
| <i>Andrzej Sluzek</i>                                                                                                                        |     |
| Color Correction System Using a Color Compensation Chart<br>for the Images from Digital Camera .....                                         | 258 |
| <i>Seok-Han Lee, Sang-Won Um, and Jong-Soo Choi</i>                                                                                          |     |
| A Comparison of Similarity Measures for 2D Rigid MR Image<br>Registration Using Wavelet Transform .....                                      | 270 |
| <i>Shutao Li, Shengchu Deng, and Jinglin Peng</i>                                                                                            |     |
| Finding the Shortest Path Between Two Points in a Simple Polygon<br>by Applying a Rubberband Algorithm .....                                 | 280 |
| <i>Fajie Li and Reinhard Klette</i>                                                                                                          |     |
| Facial Expressions Recognition in a Single Static as well as Dynamic<br>Facial Images Using Tracking and Probabilistic Neural Networks ..... | 292 |
| <i>Hadi Seyedarabi, Won-Sook Lee, Ali Aghagolzadeh, and<br/>Sohrab Khanmohammadi</i>                                                         |     |
| Application of 3D Co-occurrence Features to Terrain Classification .....                                                                     | 305 |
| <i>Dong-Min Woo, Dong-Chul Park, Seung-Soo Han, and<br/>Quoc-Dat Nguyen</i>                                                                  |     |
| (2D) <sup>2</sup> DLDA for Efficient Face Recognition .....                                                                                  | 314 |
| <i>Dong-uk Cho, Un-dong Chang, Kwan-dong Kim,<br/>Bong-hyun Kim, and Se-hwan Lee</i>                                                         |     |
| Automatic Skull Segmentation and Registration for Tissue Change<br>Measurement After Mandibular Setback Surgery .....                        | 322 |
| <i>Jeongjin Lee, Namkug Kim, Ho Lee, Suk-Ho Kang,<br/>Jae-Woo Park, and Young-Il Chang</i>                                                   |     |
| Voting Method for Stable Range Optical Flow Computation .....                                                                                | 332 |
| <i>Atsushi Imiya and Daisuke Yamada</i>                                                                                                      |     |
| Shadow Removal for Foreground Segmentation .....                                                                                             | 342 |
| <i>Kuo-Hua Lo, Mau-Tsuen Yang, and Rong-Yu Lin</i>                                                                                           |     |
| A Unified Approach for Combining ASM into AAM .....                                                                                          | 353 |
| <i>Jaewon Sung and Daijin Kim</i>                                                                                                            |     |
| Variational Approach to Cardiac Motion Estimation for Small Animals<br>in Tagged Magnetic Resonance Imaging .....                            | 363 |
| <i>Hsun-Hsien Chang</i>                                                                                                                      |     |
| Performance Assessment of Image Fusion .....                                                                                                 | 373 |
| <i>Qiang Wang and Yi Shen</i>                                                                                                                |     |

|                                                                                                                                  |     |
|----------------------------------------------------------------------------------------------------------------------------------|-----|
| Possibilistic C-Template Clustering and Its Application in Object Detection in Images .....                                      | 383 |
| <i>Tsaipei Wang</i>                                                                                                              |     |
| Position Estimation of Solid Balls from Handy Camera for Pool Supporting System .....                                            | 393 |
| <i>Hideaki Uchiyama and Hideo Saito</i>                                                                                          |     |
| Shape Retrieval Using Statistical Chord-Length Features .....                                                                    | 403 |
| <i>Chaojian Shi and Bin Wang</i>                                                                                                 |     |
| Multifocus Image Sequences for Iris Recognition .....                                                                            | 411 |
| <i>Byungjun Son, Sung-Hyuk Cha, and Yillbyung Lee</i>                                                                            |     |
| Projection Method for Geometric Modeling of High Resolution Satellite Images Applying Different Approximations .....             | 421 |
| <i>Fahim Arif, Muhammad Akbar, and An-Ming Wu</i>                                                                                |     |
| <b>Intelligent Vision Applications</b>                                                                                           |     |
| Global Localization of Mobile Robot Using Omni-directional Image Correlation .....                                               | 433 |
| <i>Sukjune Yoon, Woosup Han, Seung Ki Min, and Kyung Shik Roh</i>                                                                |     |
| Computer-Aided Vision System for MURA-Type Defect Inspection in Liquid Crystal Displays .....                                    | 442 |
| <i>Hong-Dar Lin and Singa Wang Chiu</i>                                                                                          |     |
| Effective Detector and Kalman Filter Based Robust Face Tracking System .....                                                     | 453 |
| <i>Chi-Young Seong, Byung-Du Kang, Jong-Ho Kim, and Sang-Kyun Kim</i>                                                            |     |
| Recognizing Multiple Billboard Advertisements in Videos .....                                                                    | 463 |
| <i>Naoyuki Ichimura</i>                                                                                                          |     |
| Occlusion Detection and Tracking Method Based on Bayesian Decision Theory .....                                                  | 474 |
| <i>Yan Zhou, Bo Hu, and Jianqiu Zhang</i>                                                                                        |     |
| Pedestrian Recognition in Far-Infrared Images by Combining Boosting-Based Detection and Skeleton-Based Stochastic Tracking ..... | 483 |
| <i>Ryusuke Miyamoto, Hiroki Sugano, Hiroaki Saito, Hiroshi Tsutsui, Hiroyuki Ochi, Ken'ichi Hatanaka, and Yukihiro Nakamura</i>  |     |
| Unsupervised Texture Segmentation Based on Watershed and a Novel Artificial Immune Antibody Competitive Network .....            | 495 |
| <i>Wenlong Huang and Licheng Jiao</i>                                                                                            |     |

|                                                                                                                                                                                                               |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| A Novel Driving Pattern Recognition and Status Monitoring System ...<br><i>Jiann-Der Lee, Jiann-Der Li, Li-Chang Liu, and Chi-Ming Chen</i>                                                                   | 504 |
| Advances on Automated Multiple View Inspection .....<br><i>Domingo Mery and Miguel Carrasco</i>                                                                                                               | 513 |
| Target Tracking and Positioning on Video Sequence from a Moving<br>Video Camera .....<br><i>Chi-Farn Chen and Min-Hsin Chen</i>                                                                               | 523 |
| Radiometrically-Compensated Projection onto Non-Lambertian Surface<br>Using Multiple Overlapping Projectors .....<br><i>Hanhoon Park, Moon-Hyun Lee, Byung-Kuk Seo,<br/>Hong-Chang Shin, and Jong-Il Park</i> | 534 |
| Motion Detection in Complex and Dynamic Backgrounds .....<br><i>Daeyong Park, Junbeom Kim, Jaemin Kim, Seongwon Cho, and<br/>Sun-Tae Chung</i>                                                                | 545 |
| Effective Face Detection Using a Small Quantity of Training Data .....<br><i>Byung-Du Kang, Jong-Ho Kim, Chi-Young Seong, and<br/>Sang-Kyun Kim</i>                                                           | 553 |
| A New Passage Ranking Algorithm for Video Question Answering .....<br><i>Yu-Chieh Wu, Yue-Shi Lee, Jie-Chi Yang, and Show-Jane Yen</i>                                                                        | 563 |
| Fusion of Luma and Chroma GMMs for HMM-Based Object<br>Detection .....<br><i>Wen-Hao Wang and Ruei-Cheng Wu</i>                                                                                               | 573 |
| Undistorted Projection onto Dynamic Surface .....<br><i>Hanhoon Park, Moon-Hyun Lee, Byung-Kuk Seo, and Jong-Il Park</i>                                                                                      | 582 |
| Robust Moving Object Detection on Moving Platforms .....<br><i>Ming-Yu Shih and Bwo-Chau Fu</i>                                                                                                               | 591 |
| Automatic Selection and Detection of Visual Landmarks Using Multiple<br>Segmentations .....<br><i>Daniel Langdon, Alvaro Soto, and Domingo Mery</i>                                                           | 601 |
| Hybrid Camera Surveillance System by Using Stereo Omni-directional<br>System and Robust Human Detection .....<br><i>Kenji Iwata, Yutaka Satoh, Ikushi Yoda, and Katsuhiko Sakaue</i>                          | 611 |
| Robust TV News Story Identification Via Visual Characteristics<br>of Anchorperson Scenes .....<br><i>Chia-Hung Yeh, Min-Kuan Chang, Ko-Yen Lu, and Maverick Shih</i>                                          | 621 |
| Real-Time Automatic Calibration for Omni-display in Ubiquitous<br>Computing .....<br><i>Dongwuk Kyoung, Yunli Lee, Eunjung Han, and Keechul Jung</i>                                                          | 631 |

|                                                                                                                                                                                                                     |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Face Occlusion Detection for Automated Teller Machine Surveillance ...<br><i>Daw-Tung Lin and Ming-Ju Liu</i>                                                                                                       | 641 |
| Automatic Pose-Normalized 3D Face Modeling and Recognition<br>Systems .....<br><i>Sunjin Yu, Kwontaeg Choi, and Sangyoun Lee</i>                                                                                    | 652 |
| Vision-Based Game Interface Using Human Gesture .....<br><i>Hye Sun Park, Do Joon Jung, and Hang Joon Kim</i>                                                                                                       | 662 |
| Terminal Phase Vision-Based Target Recognition and 3D Pose<br>Estimation for a Tail-Sitter, Vertical Takeoff and Landing Unmanned<br>Air Vehicle .....<br><i>Allen C. Tsai, Peter W. Gibbens, and R. Hugh Stone</i> | 672 |
| Detection of Traffic Lights for Vision-Based Car Navigation System ....<br><i>Tae-Hyun Hwang, In-Hak Joo, and Seong-Ik Cho</i>                                                                                      | 682 |
| What Is the Average Human Face? .....<br><i>George Mamic, Clinton Fookes, and Sridha Sridharan</i>                                                                                                                  | 692 |
| An Improved Real-Time Contour Tracking Algorithm Using<br>Fast Level Set Method .....<br><i>Myo Thida, Kap Luk Chan, and How-Lung Eng</i>                                                                           | 702 |
| <br><b>Multimedia Compression and Transmission</b>                                                                                                                                                                  |     |
| Dynamic Perceptual Quality Control Strategy for Mobile Multimedia<br>Transmission Via Watermarking Index .....<br><i>Chin-Lun Lai</i>                                                                               | 712 |
| A Rate Control Using Adaptive Model-Based Quantization .....<br><i>Seonki Kim, Tae-Jung Kim, Sang-Bong Lee, and Jae-Won Suh</i>                                                                                     | 722 |
| The Design of Single Encoder and Decoder for Multi-view Video .....<br><i>Haksoo Kim and Manbae Kim</i>                                                                                                             | 732 |
| Vector Quantization in SPIHT Image Codec .....<br><i>Rafi Mohammad and Christopher F. Barnes</i>                                                                                                                    | 742 |
| Objective Image Quality Evaluation for JPEG, JPEG 2000,<br>and Vidware Vision <sup>TM</sup> .....<br><i>Chung-Hao Chen, Yi Yao, David L. Page, Bisma Abidi,<br/>Andreas Koschan, and Mongi Abidi</i>                | 751 |
| Efficient H.264 Encoding Based on Skip Mode Early Termination .....<br><i>Tien-Ying Kuo and Hsin-Ju Lu</i>                                                                                                          | 761 |

|                                                                                                                              |     |
|------------------------------------------------------------------------------------------------------------------------------|-----|
| Low-Power H.264 Deblocking Filter Algorithm and Its SoC Implementation .....                                                 | 771 |
| <i>Byung-Joo Kim, Jae-Il Koo, Min-Cheol Hong, and Seongsoo Lee</i>                                                           |     |
| Rate Control Scheme for Video Coding Using Low-Memory-Cost Look-Up Table .....                                               | 780 |
| <i>Linjian Mo, Chun Chen, Jiajun Bu, Xu Li, and Zhi Yang</i>                                                                 |     |
| Adaptive GOP Bit Allocation to Provide Seamless Video Streaming in Vertical Handoff .....                                    | 791 |
| <i>Dinh Trieu Duong, Hye-Soo Kim, Le Thanh Ha, Jae-Yun Jeong, and Sung-Jea Ko</i>                                            |     |
| Memory-Efficiency and High-Speed Architectures for Forward and Inverse DCT with Multiplierless Operation .....               | 802 |
| <i>Tze-Yun Sung, Mao-Jen Sun, Yaw-Shih Shieh, and Hsi-Chin Hsin</i>                                                          |     |
| Unequal Priority Arrangement for Delivering Streaming Videos over Differentiated Service Networks .....                      | 812 |
| <i>Chu-Chuan Lee, Pao-Chi Chang, and Shih-Jung Chuang</i>                                                                    |     |
| A New Macroblock-Layer Rate Control for H.264/AVC Using Quadratic R-D Model .....                                            | 822 |
| <i>Nam-Rye Son, Yoon-Jeong Shin, Jae-Myung Yoo, and Guee-Sang Lee</i>                                                        |     |
| Selective Quality Control of Multiple Video Programs for Digital Broadcasting Services .....                                 | 832 |
| <i>Hong-Yeon Yu, Aaron Park, Keun Won Jang, Jin Park, Seong-Joon Baek, Dong Kook Kim, Young-Chul Kim, and Sung-Hoon Hong</i> |     |
| Joint Source-Channel Video Coding Based on the Optimization of End-to-End Distortions .....                                  | 842 |
| <i>Wen-Nung Lie, Zhi-Wei Gao, Tung-Lin Liu, and Ping-Chang Jui</i>                                                           |     |
| A Temporal Error Concealment Method Based on Edge Adaptive Boundary Matching .....                                           | 852 |
| <i>Hyun-Soo Kang, Yong-Woo Kim, and Tae-Yong Kim</i>                                                                         |     |
| Fractional Full-Search Motion Estimation VLSI Architecture for H.264/AVC .....                                               | 861 |
| <i>Chien-Min Ou, Huang-Chun Roan, and Wen-Jyi Hwang</i>                                                                      |     |
| Motion JPEG2000 Coding Scheme Based on Human Visual System for Digital Cinema .....                                          | 869 |
| <i>Jong Han Kim, Sang Beom Kim, and Chee Sun Won</i>                                                                         |     |

|                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------|-----|
| Wavelet-Based Image Compression with Polygon-Shaped Region of Interest .....                                 | 878 |
| <i>Yao-Tien Chen, Din-Chang Tseng, and Pao-Chi Chang</i>                                                     |     |
| Buffer Occupancy Feedback Security Control and Changing Encryption Keys to Protect MOD Services .....        | 888 |
| <i>Jen-Chieh Lai and Chia-Hui Wang</i>                                                                       |     |
| H.264-Based Depth Map Sequence Coding Using Motion Information of Corresponding Texture Video .....          | 898 |
| <i>Han Oh and Yo-Sung Ho</i>                                                                                 |     |
| A Novel Macroblock-Layer Rate-Distortion Model for Rate Control Scheme of H.264/AVC .....                    | 908 |
| <i>Tsung-Han Chiang and Sheng-Jyh Wang</i>                                                                   |     |
| A Geometry-Driven Hierarchical Compression Technique for Triangle Meshes .....                               | 919 |
| <i>Chang-Min Chou and Din-Chang Tseng</i>                                                                    |     |
| Shape Preserving Hierarchical Triangular Mesh for Motion Estimation .....                                    | 929 |
| <i>Dong-Gyu Lee and Su-Young Han</i>                                                                         |     |
| Parameter Selection of Robust Fine Granularity Scalable Video Coding over MPEG-4 .....                       | 939 |
| <i>Shao-Yu Wang and Sheng-Jyh Wang</i>                                                                       |     |
| Adaptive QoS Control for Scalable Video Streaming over WLAN.....                                             | 949 |
| <i>Hee Young Cho, Doug Young Suh, and Gwang Hoon Park</i>                                                    |     |
| H.264 Intra Mode Decision for Reducing Complexity Using Directional Masks and Neighboring Modes.....         | 959 |
| <i>Jongho Kim, Kicheol Jeon, and Jechang Jeong</i>                                                           |     |
| Seamless Channel Transition for BroadCatch Scheme .....                                                      | 969 |
| <i>Yukon Chang and Shou-Li Hsu</i>                                                                           |     |
| Spatial Interpolation Algorithm for Consecutive Block Error Using the Just-Noticeable-Distortion Method..... | 979 |
| <i>Su-Yeol Jeon, Chae-Bong Sohn, Ho-Chong Park, Chang-Beom Ahn, and Seoung-Jun Oh</i>                        |     |
| Error Resilient Motion Estimation for Video Coding.....                                                      | 988 |
| <i>Wen-Nung Lie, Zhi-Wei Gao, Wei-Chih Chen, and Ping-Chang Jui</i>                                          |     |

## Multimedia Signal Processing

|                                                                                                        |      |
|--------------------------------------------------------------------------------------------------------|------|
| A Novel Scrambling Scheme for Digital Video Encryption .....                                           | 997  |
| <i>Zhenyong Chen, Zhang Xiong, and Long Tang</i>                                                       |      |
| An Electronic Watermarking Technique for Digital Holograms<br>in a DWT Domain .....                    | 1007 |
| <i>Hyun-Jun Choi, Young-Ho Seo, Ji-Sang Yoo, and Dong-Wook Kim</i>                                     |      |
| Off-Line Signature Verification Based on Directional Gradient<br>Spectrum and a Fuzzy Classifier ..... | 1018 |
| <i>Young Woon Woo, Soowhan Han, and Kyung Shik Jang</i>                                                |      |
| Automatic Annotation and Retrieval for Videos .....                                                    | 1030 |
| <i>Fangshi Wang, De Xu, Wei Lu, and Hongli Xu</i>                                                      |      |
| Application of Novel Chaotic Neural Networks to Text Classification<br>Based on PCA .....              | 1041 |
| <i>Jin Zhang, Guang Li, and Walter J. Freeman</i>                                                      |      |
| Lip Localization Based on Active Shape Model and Gaussian Mixture<br>Model .....                       | 1049 |
| <i>Kyung Shik Jang, Soowhan Han, Imgeun Lee, and<br/>Young Woon Woo</i>                                |      |
| Multi-scale MAP Estimation of High-Resolution Images .....                                             | 1059 |
| <i>Shubin Zhao</i>                                                                                     |      |
| Fast Transcoding Algorithm from MPEG2 to H.264 .....                                                   | 1067 |
| <i>Donghyung Kim and Jechang Jeong</i>                                                                 |      |
| A New Display-Capture Based Mobile Watermarking System .....                                           | 1075 |
| <i>Jong-Wook Bae, Bo-Ho Cho, and Sung-Hwan Jung</i>                                                    |      |
| Adaptive Data Hiding for Images Based on Harr Discrete Wavelet<br>Transform .....                      | 1085 |
| <i>Bo-Luen Lai and Long-Wen Chang</i>                                                                  |      |
| Error Concealment in Video Communications by Informed<br>Watermarking .....                            | 1094 |
| <i>Chowdary Adsumilli, Sanjit Mitra, Taesuk Oh, and<br/>Yong Cheol Kim</i>                             |      |
| Dirty-Paper Trellis-Code Watermarking with Orthogonal Arcs .....                                       | 1103 |
| <i>Taekyung Kim, Taesuk Oh, Yong Cheol Kim, and Seongjong Choi</i>                                     |      |
| An Efficient Object Tracking Algorithm with Adaptive Prediction<br>of Initial Searching Point .....    | 1113 |
| <i>Jiyan Pan, Bo Hu, and Jian Qiu Zhang</i>                                                            |      |

An Automatic Personal TV Scheduler Based on HMM for Intelligent Broadcasting Services ..... 1123  
*Agus Syawal Yudhistira, Munchurl Kim, Hieyong Kim, and Hankyu Lee*

Increasing the Effect of Fingers in Fingerspelling Hand Shapes by Thick Edge Detection and Correlation with Penalization ..... 1133  
*Oğuz Altun and Songül Albayrak*

Binary Edge Based Adaptive Motion Correction for Accurate and Robust Digital Image Stabilization ..... 1142  
*Ohyun Kwon, Byungdeok Nam, and Joonki Paik*

Contrast Enhancement Using Adaptively Modified Histogram Equalization..... 1150  
*Hyoung-Joon Kim, Jong-Myung Lee, Jin-Aeon Lee, Sang-Geun Oh, and Whoi-Yul Kim*

A Novel Fade Detection Algorithm on H.264/AVC Compressed Domain ..... 1159  
*Bitu Damghanian, Mahmoud Reza Hashemi, and Mohammad Kazem Akbari*

A Representation of WOS Filters Through Support Vector Machine ..... 1168  
*W.C. Chen and J.H. Jeng*

Detection Method and Removing Filter for Corner Outliers in Highly Compressed Video ..... 1177  
*Jongho Kim, Kicheol Jeon, and Jechang Jeong*

Accurate Foreground Extraction Using Graph Cut with Trimap Estimation ..... 1185  
*Jung-Ho Ahn and Hyeran Byun*

**Panoramic Imaging and Distributed Video Systems**

Homography Optimization for Consistent Circular Panorama Generation ..... 1195  
*Masatoshi Sakamoto, Yasuyuki Sugaya, and Kenichi Kanatani*

Graph-Based Global Optimization for the Registration of a Set of Images ..... 1206  
*Hui Zhou*

One-Dimensional Search for Reliable Epipole Estimation ..... 1215  
*Tsuyoshi Migita and Takeshi Shakunaga*

## Sensor Technologies

- Image Technology for Camera-Based Automatic Guided Vehicle ..... 1225  
*Young-Jae Ryoo*
- An Efficient Demosaiced Image Enhancement Method for a Low Cost  
 Single-Chip CMOS Image Sensor ..... 1234  
*Wonjae Lee, Seongjoo Lee, and Jaeseok Kim*
- Robust Background Subtraction for Quick Illumination Changes ..... 1244  
*Shinji Fukui, Yuji Iwahori, Hidenori Itoh, Haruki Kawanaka, and  
 Robert J. Woodham*
- A New Sampling Method of Auto Focus for Voice Coil Motor  
 in Camera Modules ..... 1254  
*Wei Hsu, Chiou-Shann Fuh*

## Visualization

- A Fast Trapeziums-Based Method for Soft Shadow Volumes ..... 1264  
*Difei Lu and Xiuzi Ye*
- Photo-Consistent Motion Blur Modeling for Realistic Image  
 Synthesis ..... 1273  
*Huei-Yung<sup>1</sup>Lin and Chia-Hong Chang*
- Integration of GPS, GIS and Photogrammetry for Texture Mapping  
 in Photo-Realistic City Modeling ..... 1283  
*Jiann-Yeou Rau, Tee-Ann Teo, Liang-Chien Chen, Fuan Tsai,  
 Kuo-Hsin Hsiao, and Wei-Chen Hsu*
- Focus + Context Visualization with Animation ..... 1293  
*Yingcai Wu, Huamin Qu, Hong Zhou, and Ming-Yuen Chan*
- Exploiting Spatial-temporal Coherence in the Construction of Multiple  
 Perspective Videos ..... 1303  
*Mau-Tsuen Yang, Shih-Yu Huang, Kuo-Hua Lo, Wen-Kai Tai, and  
 Cheng-Chin Chiang*
- A Perceptual Framework for Comparisons of Direct Volume Rendered  
 Images ..... 1314  
*Hon-Cheng Wong, Huamin Qu, Un-Hong Wong, Zesheng Tang, and  
 Klaus Mueller*
- Hierarchical Contribution Culling for Fast Rendering of Complex  
 Scenes ..... 1324  
*Jong-Seung Park and Bum-Jong Lee*

Hierarchical Blur Identification from Severely Out-of-Focus Images ..... 1334  
Jungsoo Lee, Yoonjong Yoo, Jeongho Shin, and Joonki Paik

Author Index ..... 1343

Scenes ..... 1354  
Jong-Seung Park and Bum-Jong Lee

Hierarchical Contribution Culling for Fast Rendering of Complex  
Images ..... 1361  
Hon-Cheng Wong, Huanmin Qu, Ur-Hong Wong, Zesheng Tang, and  
Klaus Mueller

A Perceptual Framework for Comparison of Direct Volume Rendering  
Images ..... 1374  
Cheng-Chieh Chien, Yuh-Jia Chen, and Keng-Wei Chen

Perspective Video Sequences in the Construction of Multiple  
Exploiting Spatial-temporal Coherence in the Construction of Multiple  
Images ..... 1383  
Wen-Tsun Yang, Shih-Yu Huang, Kuo-Hua Lo, Wen-Kai Tai, and  
Jann-Yeon Rau

Integration of GPS, GIS and Photogrammetry for Texture Mapping  
in Photo-Realistic City Modeling ..... 1393  
Kuo-Hsin Hsiao, and Wei-Chen Hsu

Photo-Consistent Motion Blur Modeling for Realistic Image  
Synthesis ..... 1403  
Hui-Yang Lin and Chia-Hong Chang

A Fast Trapezium-Based Method for Soft Shadow Volume  
Rendering ..... 1414  
Diet Lu and Xuan Ye

Visualisation  
A New Sampling Method of Audio Focus for Voice Coil Motor  
in Camera Modules ..... 1424  
Wei-Hsu, Chiao-Shann Fan, Le-Yea-Lin, Lee-Ming-Yue, and  
Joon-Kim

Robust Background Subtraction for Quick Illumination Changes  
Using Adaptive Motion-Model ..... 1434  
Robert A. Woodham, Jimmy Park, Yuj Park, Hidero Kawanaka, and  
Chang-Kwon Byun

Image Technology for Camera-Based Virtual Reality ..... 1445  
Young-Jae Ryoo, Hunkun Lee, and Jaesook Kim

An Efficient Detached Image Elimination Method for a Low Cost  
Single-Chip CMOS Image Sensor ..... 1455  
Wonjae Lee, Seongjoo Lee, and Jaesook Kim