Editorial Board

Simone Diniz Junqueira Barbosa  
*Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Rio de Janeiro, Brazil*

Phoebe Chen  
*La Trobe University, Melbourne, Australia*

Alfredo Cuzzocrea  
*ICAR-CNR and University of Calabria, Italy*

Xiaoyong Du  
*Renmin University of China, Beijing, China*

Joaquim Filipe  
*Polytechnic Institute of Setúbal, Portugal*

Orhun Kara  
*TÜBİTAK BİLGEM and Middle East Technical University, Turkey*

Igor Kotenko  
*St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, Russia*

Krishna M. Sivalingam  
*Indian Institute of Technology Madras, India*

Dominik Śleżak  
*University of Warsaw and Infobright, Poland*

Takashi Washio  
*Osaka University, Japan*

Xiaokang Yang  
*Shanghai Jiao Tong University, China*
Preface

It was a pleasure and an honor to have organized the 8th Conference on Image and Graphics Technologies and Applications. The conference was held on June 19–20, 2014, in Beijing, China. The conference series is the premier forum for presenting research in image processing and graphics and their related topics. The conference provides a platform for sharing the progress in these areas: the generation of new ideas, new approaches, new techniques, new applications, and new evaluation. The conference is organized under the auspices of the Beijing Society of Image and Graphics.

The conference program includes keynotes, oral papers, posters, demos and exhibitions. For this year’s conference, we received 110 papers for review. Each of these was assessed by no fewer than two reviewers, with some of the papers being assessed by three reviewers; 39 submissions were selected for oral and poster presentation.

We are grateful for the efforts of everyone who helped make this conference a reality. We received a record number of submissions this year and we are grateful to the reviewers, who completed the reviewing process on time. The local host, the Academy of Armored Forces Engineering, enabled many of the local arrangements for the conference.

The conference continues to provide a leading forum for cutting-edge research and case studies in image and graphics.

June 2014

Qiuqi Ruan
Table of Contents

Image Quality Assessment Based on SIFT and SSIM .................. 1
Wenjun Lu, Congli Li, Yongchang Shi, and Xiaoning Sun

Edge Detection in Presence of Impulse Noise ...................... 8
Yuying Shi, Feng Guo, Xinhua Su, and Jing Xu

A Novel Multi-focus Image Capture and Fusion System for Macro Photography .................................................. 19
Yili Zhao, Yi Zhou, and Dan Xu

Comparative Study of Near-Lossless Compression by JPEG XR, JPEG 2000, and H.264 on 4K Video Sequences ................. 29
Wang Dan

A Retinex-Based Local Tone Mapping Algorithm Using $L_0$ Smoothing Filter ................................................................. 40
Lei Tan, Xiaolin Liu, and Kaichuang Xue

A Fast Mode Decision Algorithm and Its Hardware Design for H.264/AVC Intra Prediction ........................................... 48
Wei Wang, Yuting Xie, Tao Lin, and Jie Hu

Research of Multi-focus Image Fusion Algorithm Based on Sparse Representation and Orthogonal Matching Pursuit .............. 57
Li Xuejun and Wang Minghui

Infrared Face Recognition Based on DCT and Partial Least Squares ..... 67
Zhihua Xie and Guodong Liu

Pipeline Architecture for High Speed License Plate Character Recognition ................................................................. 74
Boyu Gu, Qiang Zhang, and Zhenhuan Zhao

Robust Dual-Kernel Tracking Using Both Foreground and Background ................................................................. 83
Wangsheng Yu, Zhiqiang Hou, Xiaohua Tian, Lang Zhang, and Wanjun Xu

Humanoid-Eye Imaging System Model with Ability of Resolving Power Computing .................................................. 91
Ma Huimin and Zhou Luyao

Color Cast Detection Method Based on Multi-feature Extraction ...... 103
Minjing Miao, Yuan Yuan, Juhua Liu, and Hanfei Yi
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research on an Extracting Method to Assist Manual Identification of</td>
<td>110</td>
</tr>
<tr>
<td>Targets</td>
<td></td>
</tr>
<tr>
<td><strong>Yue Shi and Guoying Zhang</strong></td>
<td></td>
</tr>
<tr>
<td>A Face Recognition under Varying Illumination</td>
<td>120</td>
</tr>
<tr>
<td><strong>Haodong Song, Xiaozhu Lin, and Zhanlin Liu</strong></td>
<td></td>
</tr>
<tr>
<td>CS-FREAK: An Improved Binary Descriptor</td>
<td>129</td>
</tr>
<tr>
<td><strong>Jianyong Wang, Xuemei Wang, Xiaogang Yang, and Aigang Zhao</strong></td>
<td></td>
</tr>
<tr>
<td>Lung Fields Segmentation Algorithm in Chest Radiography</td>
<td>137</td>
</tr>
<tr>
<td><strong>Guodong Zhang, Lin Cong, Liu Wang, and Wei Guo</strong></td>
<td></td>
</tr>
<tr>
<td>Automatic Classification of Human Embryo Microscope Images Based</td>
<td>145</td>
</tr>
<tr>
<td>on LBP Feature</td>
<td></td>
</tr>
<tr>
<td>**Liang Xu, Xuefeng Wei, Yabo Yin, Weizhou Wang, Yun Tian, and</td>
<td></td>
</tr>
<tr>
<td>Mingquan Zhou</td>
<td></td>
</tr>
<tr>
<td>Robust and Accurate Calibration Point Extraction with Multi-scale</td>
<td>153</td>
</tr>
<tr>
<td>Chess-Board Feature Detector</td>
<td></td>
</tr>
<tr>
<td><strong>Yang Liu, Yisong Chen, and Guoping Wang</strong></td>
<td></td>
</tr>
<tr>
<td>A Mixed-Method Approach for Rapid Modeling of the Virtual Scene</td>
<td>165</td>
</tr>
<tr>
<td>Building</td>
<td></td>
</tr>
<tr>
<td><strong>Pu Ren, Wenjian Wang, Mingquan Zhou, and Chongbin Xu</strong></td>
<td></td>
</tr>
<tr>
<td>An Improved Method of Building Rapid 3D Modeling Based on Digital</td>
<td>175</td>
</tr>
<tr>
<td>Photogrammetric Technique</td>
<td></td>
</tr>
<tr>
<td><strong>Zimin Zhang, Ying Zhou, Jian Cui, and Hao Liu</strong></td>
<td></td>
</tr>
<tr>
<td>3-D Reconstruction of Three Views Based on Manifold Study</td>
<td>181</td>
</tr>
<tr>
<td><strong>Li Cong, Zhao Hongrui, Fu Gang, and Peng Xingang</strong></td>
<td></td>
</tr>
<tr>
<td>Distribution and Rendering of Real-Time Scene Based on the Virtual</td>
<td>192</td>
</tr>
<tr>
<td>Reality System</td>
<td></td>
</tr>
<tr>
<td><strong>Chengfang Zhang and Guoping Wang</strong></td>
<td></td>
</tr>
<tr>
<td>Probabilistic Model for Virtual Garment Modeling</td>
<td>203</td>
</tr>
<tr>
<td><strong>Shan Zeng, Fan Zhou, Ruomei Wang, and Xiaonan Luo</strong></td>
<td></td>
</tr>
<tr>
<td>Dense 3D Reconstruction and Tracking of Dynamic Surface</td>
<td>213</td>
</tr>
<tr>
<td><strong>Jinlong Shi, Suqin Bai, Qiang Qian, Linbin Pang, and Zhi Wang</strong></td>
<td></td>
</tr>
<tr>
<td>Scene Simulation for a New Type of Armored Equipment Simulator</td>
<td>224</td>
</tr>
<tr>
<td><strong>Guanghui Li, Qiang Liang, Wei Shao, and Xu-dong Fan</strong></td>
<td></td>
</tr>
<tr>
<td>Study on the Key Technique of the Hill Shading Virtual Roaming</td>
<td>230</td>
</tr>
<tr>
<td>System Based on XNA</td>
<td></td>
</tr>
<tr>
<td><strong>Hesong Lu, Zaijiang Tang, Qiang Liang, and Wei Shao</strong></td>
<td></td>
</tr>
</tbody>
</table>
Study on MMO in Visual Simulation Application .................... 239
   Liang Qiang, Fan Rui, Xu Renjie, and Du Jun

Towards the Representation of Virtual Gymnasia Based On
Multi-dimensional Information Integration ........................... 249
   Xiangzhong Xu, Jiandong Yang, Haohua Xu, and Yaxin Tan

Night Vision Simulation of Drive Simulator Based on OpenGVS4.5 ..... 257
   Zheng Changwei, Xue Qing, and Xu Wenchao

The Design and Implementation of Military Plotting System Based on
Speech Recognition Technology ........................................... 264
   Wei Shao, Guanghui Li, Xiying Huang, Qiang Liang, and Hesong Lu

Defect Detection in Fabrics Using Local Binary Patterns ............... 274
   Pengfei Li, Xuan Lin, Junfeng Jing, and Lei Zhang

Research on Teeth Positioning Based on Wavelet Transform and Edge
Detection ................................................................. 284
   Zhou Zhou, Guoxia Sun, and Tao Yang

The Orientation Angle Detection of Multiple Insulators in Aerial
Image ............................................................................ 294
   Zhenbing Zhao, Ning Liu, Mingxiao Xi, and Yajing Yan

Improved Robust Watermarking Based on Rational Dither
Modulation ................................................................. 305
   Zairan Wang, Jing Dong, Wei Wang, and Tieniu Tan

The Research of Vehicle Tracking Based on Difference Screening and
Coordinate Mapping ........................................................ 315
   Zhang Jun-yuan, Liu Wei-guo, Tong Bao-feng, and Wang Nan

Pathology Image Retrieval by Block LBP Based pLSA Model with
Low-Rank and Sparse Matrix Decomposition ......................... 327
   Yushan Zheng, Zhiguo Jiang, Jun Shi, and Yibing Ma

Remote Sensing Image Change Detection Based on Low-Rank
Representation .............................................................. 336
   Yan Cheng, Zhiguo Jiang, Jun Shi, Haopeng Zhang, and Gang Meng

Two New Methods for Locating Outer Edge of Iris .................... 345
   Yujie Liu and Hong Tian

Effects of the Gridding to Numerical Simulation of the Armour-Piercing
Warhead Penetration through the Steel Target ......................... 352
   Jun-qing Huang, Ya-long Fan Rui Ma, and Wei Shao

Author Index .................................................................... 359