PROCEEDINGS OF SPIE

Sixth International Conference on Machine Vision (ICMV 2013)

Antanas Verikas Branislav Vuksanovic Jianhong Zhou Editors

16–17 November 2013 London, United Kingdom

Organized by Sichuan University (China) Huazhong Normal University (China) Aim Shams University (Egypt) Singapore Institute of Electronics (Singapore) University of Portsmouth (United Kingdom) China Communications (China) Science and Engineering Institute (United States)

Published by SPIE

Volume 9067

Proceedings of SPIE 0277-786X, V. 9067

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Sixth International Conference on Machine Vision (ICMV 2013), edited by Antanas Verikas, Branislav Vuksanovic, Jianhong Zhou, Proc. of SPIE Vol. 9067, 906701 · © 2013 SPIE · CCC code: 0277-786X/13/\$18 · doi: 10.1117/12.2053723 The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in Sixth International Conference on Machine Vision (ICMV 2013)edited by Branislav Vuksanovic, Antanas Verikas, Jianhong Zhou, Proceedings of SPIE Vol. 9067 (SPIE, Bellingham, WA, 2013) Article CID Number.

ISSN: 0277-786X ISBN: 9780819499967

Published by **SPIE** P.O. Box 10, Bellingham, Washington 98227-0010 USA Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445 SPIE.org

Copyright © 2013, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/13/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.



Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering
- system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc.

The CID Number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID Number.

Contents

- xiii Conference Committee
- xv Introduction

SIXTH INTERNATIONAL CONFERENCE ON MACHINE VISION (ICMV 2013)

- 9067 02 Stereo matching using belief propagation with spatiotemporal consistency [9067-1] Y. Yang, X. Song, Q. Zhang, Communication Univ. of China (China)
- 9067 03 Occluded object imaging via optimal camera selection [9067-2]
 T. Yang, Y. Zhang, X. Tong, W. Ma, Northwestern Polytechnical Univ. (China); R. Yu, Univ. College London (United Kingdom)
- 9067 04 Design of directional selection for three-dimensional complex discrete wavelet transform [9067-3]
 T. Kato, Z. Zhang, H. Toda, T. Imamura, T. Miyake, Toyohashi Univ. of Technology (Japan);

T. Kato, Z. Zhang, H. Toda, T. Imamura, T. Miyake, Toyohashi Univ. of Technology (Japan); Y. Ishikawa, Ishikawa Medical Clinic (Japan)

- 9067 05 **Pedestrian cue detection: colour inverse maximum likelihood ratio** [9067-4] M. Braik, D. Pycock, Univ. of Birmingham (United Kingdom)
- 9067 06 A method of real-time detection for distant moving obstacles by monocular vision [9067-5] B. Jia, M. Zhu, Univ. of Science and Technology of China (China)
- 9067 07 **Finger mouse system based on computer vision in complex backgrounds** [9067-6] J. Xu, X. Zhang, Southeast Univ. (China)

9067 08 A defects detection system for the surfaces of stampings [9067-7]

B. Chen, Shenzhen Institute of Information Technology (China); J. Jiang, Shenzhen Institute of Advanced Technology (China), The Chinese Univ. of Hong Kong (China), and The Shenzhen Key Lab. of Computer Vision and Pattern Recognition (China); J. Cheng, Shenzhen Institute of Advanced Technology (China), The Chinese Univ. of Hong Kong (China) and Guangdong Provincial Key Lab. of Robotics and Intelligent System (China); S. Shen, Shenzhen Institutes of Advanced Technology (China) and The Chinese Univ. of Hong Kong (China)

- 9067 09 Face recognition using sparse representation classifier with Volterra kernels [9067-8]
 H. Li, L. Wang, Shandong Computer Science Ctr. (China); J. Zhang, Z. Zhang, Southwest Jiaotong Univ. (China)
- 9067 0A Multi-view urban scene reconstruction in non-uniform volume [9067-9]
 R.-C. Mao, Shanghai Jiao Tong Univ. (China); Q. Wu, Univ. of Technology, Sydney (Australia); Y. Qiao, Shanghai Jiao Tong Univ. (China); L. Bai, The Univ. of Nottingham (United Kingdom); J. Yang, Shanghai Jiao Tong Univ. (China)

- 9067 0B Automatic 2D-to-3D video conversion by monocular depth cues fusion and utilizing human face landmarks [9067-10] M. B. Fard, U. Bayazit, Istanbul Technical Univ. (Turkey)
- 9067 0C Semantic labeling of indoor scenes from RGB-D images with discriminative learning [9067-11]
 B. Liu, H. Fan, Beijing Univ. of Technology (China)
- 9067 0D Variational Bayesian level set for image segmentation [9067-12]
 H.-B. Qu, Beijing Academy of Science and Technology (China); L. Xiang, China Jiliang Univ. (China); J.-Q. Wang, B. Li, Beijing Academy of Science and Technology (China); H.-J. Tao, China Jiliang Univ. (China)
- 9067 OE Face and eyes localization for pose and light invariant face image [9067-13] W. Li, China West Normal Univ. (China)
- 9067 OF Robust moving ship detection using context-based motion analysis and occlusion handling [9067-14]
 X. Bao, S. Zinger, Technische Univ. Eindhoven (Netherlands); R. Wijnhoven, ViNotion B.V. (Netherlands); P. H. N. de With, Technische Univ. Eindhoven (Netherlands)
- 9067 OG **Mutual information-based facial expression recognition** [9067-15] M. Hazar, M. Hammami, Univ. of Sfax (Tunisia); B.-A. Hanêne, Univ. of Sfax (Tunisia) and King Abdulaziz Univ. (Saudi Arabia)
- 9067 0H Automatically measuring the effect of strategy drawing features on pupils' handwriting and gender [9067-16]
 N. Tabatabaey-Mashadi, R. Sudirman, Univ. Teknologi Malaysia (Malaysia); R. M. Guest, Kent Univ. (United Kingdom); P. I. Khalid, Univ. Teknologi Malaysia (Malaysia)
- 9067 01 **Robust matching of SIFT keypoints via adaptive distance ratio thresholding** [9067-17] L. Mi, Y. Qiao, J. Yang, Shanghai Jiao Tong Univ. (China); L. Bai, The Univ. of Nottingham (United Kingdom)
- 9067 0J **Object class and instance recognition on rgb-d data** [9067-20] V. Seib, S. Christ-Friedmann, S. Thierfelder, D. Paulus, Univ. Koblenz-Landau (Germany)
- 9067 0K Aspects on the design, implementation, and simulation of a tracked mini robot destined for special applications in theatres of operations [9067-21]
 S.-M. Petrişor, G. Bârsan, "Nicolae Bălcescu" Land Forces Academy (Romania)
- 9067 OL Breast cancer mitosis detection in histopathological images with spatial feature extraction [9067-22]
 A. Albayrak, G. Bilgin, Yildiz Technical Univ. (Turkey)
- 9067 0M Improved segmentation of occluded and adjoining vehicles in traffic surveillance videos [9067-23]
 M. Juneja, P. Grover, ITM Univ. (India)
- 9067 0N Hyperspectral image classification based on NMF Features Selection Method [9067-24] B. T. Abe, J. A. Jordaan, Tshwane Univ. of Technology (South Africa)

- 9067 00 Ensemble classifier using GRG algorithm for land cover classification [9067-25] B. T. Abe, J. A. Jordaan, Tshwane Univ. of Technology (South Africa); T. Marwala, Univ. of Johannesburg (South Africa)
- 9067 OP A new approach of facial features' localization using a morphological operation in still and sequence images [9067-28]
 K. A. Bozed, O. Adjei, A. Mansour, Univ. of Benghazi (Libyan Arab Jamahiriya) and Univ. of Bedfordshire (United Kingdom)
- 9067 0Q Performance comparisons for well-known edge detectors with proposed Yong operator [9067-29]
 C. Y. Yong, R. Sudirman, N. H. Mahmood, K. M. Chew, Univ. Teknologi Malaysia (Malaysia)
- 9067 OR **A new occluded target location method based on straight line** [9067-30] F. Gao, S. Qiu, G. Wen, National Univ. of Defense technology (China)
- 9067 0S **Cascading conditional random fields for image registration** [9067-31] F. C. Calnegru, Univ. of Pitesti (Romania)
- 9067 0T Visual odometry with high resolution time-of-flight cameras [9067-35]
 Y. Dalbah, Audi Electronics Venture GmbH (Germany); N. Dingeldey, Automotive Safety Technologies GmbH (Germany); F. M. Wahl, Technische Univ. Braunschweig (Germany)
- 9067 0U Weakly supervised automatic segmentation and 3D modeling of the knee joint from MR images [9067-36]
 A. Amami, ENIT, Univ. of Tunis El Manar (Tunisia); Z. Ben Azouz, Univ. of Tunis El Manar (Tunisia)
- 9067 0V Feature measures for the segmentation of neuronal membrane using a machine learning algorithm [9067-37]
 S. Iftikhar, A. Godil, National Institute of Standards and Technology (United States)
- 9067 0WUnattended vehicle detection for automatic traffic light control [9067-38]A. S. Abdel Hady, M. Moustafa, American Univ. in Cairo (Egypt)
- 9067 0X **A Kinect based sign language recognition system using spatio-temporal features** [9067-43] A. Memiş, S. Albayrak, Yildiz Technical Univ. (Turkey)
- 9067 OY Vehicle classification in video using virtual detection lines [9067-45] R. Kadiķis, K. Freivalds, Institute of Electronics and Computer Science (Latvia)
- 9067 0Z License plate detection algorithm [9067-44] M. Broitman, Y. Klopovsky, N. Silinskis, Institute of Electronics and Computer Science (Latvia)
- 9067 10 Action classification using a discriminative non-parametric Hidden Markov Model [9067-46]
 N. Raman, S. J. Maybank, D. Zhang, Univ. of London (United Kingdom)
- 9067 11 A new accurate pill recognition system using imprint information [9067-51] Z. Chen, S. Kamata, Waseda Univ. (Japan)

- 9067 12 PCA facial expression recognition [9067-52] I. H. El-Hori, Z. K. El-Momen, A. Ganoun, Univ. of Tripoli (Libyan Arab Jamahiriya)
- 9067 13 Application of edge detection algorithm for vision guided robotics assembly system [9067-53]
 B. K. Balabantaray, P. Jha, B. B. Biswal, National Institute of Technology (India)
- 9067 14 **Part identification in robotic assembly using vision system** [9067-54] B. K. Balabantaray, B. B. Biswal, National Institute of Technology (India)
- 9067 15 Forensic analysis of social networking application on iOS devices [9067-55] S. Zhang, L. Wang, Shandong Computer Science Ctr. (China)
- 9067 16 Real-time oriented edge detection via difference of shifted image [9067-57]
 K. Jeong, M. Jin, D. Hwang, Chonbuk National Univ. (Korea, Republic of); S. Yoon, Mokpo National Univ. (Korea, Republic of); D. S. Park, Chonbuk National Univ. (Korea, Republic of) and IT Convergence Research Ctr. (Korea, Republic of)
- 9067 17 Real-time pedestrian detection based on GMM and HOG cascade [9067-58]
 M. Jin, K. Jeong, Chonbuk National Univ. (Korea, Republic of); S. Yoon, Mokpo National Univ. (Korea, Republic of); D. S. Park, Chonbuk National Univ. (Korea, Republic of)
- 9067 18 Violence detection based on histogram of optical flow orientation [9067-59]
 Z. Yang, T. Zhang, J. Yang, Shanghai Jiao Tong Univ. (China); Q. Wu, Univ. of Technology, Sydney (Australia); L. Bai, Univ. of Nottingham (United Kingdom); L. Yao, Shanghai Jiao Tong Univ. (China)
- 9067 19 Practical algorithmic probability: an image inpainting example [9067-60]
 A. Potapov, National Research Univ. of Information Technology (Russian Federation) and AIDEUS (Russian Federation); O. Scherbakov, I. Zhdanov, National Research Univ. of Information Technology (Russian Federation)
- 9067 1 A **Traffic congestion classification using motion vector statistical features** [9067-62] A. Riaz, S. A. Khan, College of E&ME, NUST (Pakistan)
- 9067 1B Classification of wet aged related macular degeneration using optical coherence tomographic images [9067-63]
 A. Haq, College of E&ME, NUST (Pakistan); F. J. Mir, Pakistan Institute of Engineering and Applied Sciences (Pakistan); U. U. Yasin, Armed Forces Institute of Ophthalmology (Pakistan); S. A. Khan, College of E&ME, NUST (Pakistan)
- 9067 1C **Robust place recognition with an application to semantic topological mapping** [9067-64] J. R. Siddiqui, S. Khatibi, Blekinge Institute of Technology (Sweden)
- 9067 1D **Exploring manifold structure of face images via multiple graphs** [9067-65] M. Alghamdi, King Abdullah Univ. of Science and Technology (Saudi Arabia)
- 9067 1E **Robust visual tracking based on online learning of joint sparse dictionary** [9067-66] Q. Li, Y. Qiao, J. Yang, Shanghai Jiao Tong Univ. (China); L. Bai, Univ. of Nottingham (United Kingdom)

- 9067 1F **Depth consistency evaluation for error-pose detection** [9067-67] S.-Y. Jin, H.-J. Choi, KAIST (Korea, Republic of); Y. Iraqi, Khalifa Univ. (United Arab Emirates)
- 9067 1G **Clustering space-time interest points for action representation** [9067-68] S.-Y. Jin, H.-J. Choi, KAIST (Korea, Republic of)
- 9067 1H **Multiband space time processing for torpedo alert sonar** [9067-69] Y. Chen, A. Zhao, Harbin Engineering Univ. (China)
- 9067 11 Using motion correction to improve real-time cardiac MRI reconstruction [9067-73]
 E. Bilgazyev, I. Uyanik, M. Unan, Univ. of Houston (United States); D. Shah, Methodist
 DeBakey Heart and Vascular Ctr. (United States); N. V. Tsekos, E. L. Leiss, Univ. of Houston (United States)
- 9067 1 J Local stereo matching using binary weighted normalized cross-correlation [9067-74] T. Liu, L. Qiao, X. Peng, Harbin Institute of Technology (China)
- 9067 1K Sparse representation based face recognition using weighted regions [9067-75]
 E. Bilgazyev, Univ. of Houston (United States); E. Yeniaras, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States); I. Uyanik, M. Unan, E. L. Leiss, Univ. of Houston (United States)
- 9067 1L **Quality enhancement of low-resolution image by using natural images** [9067-76] E. Bilgazyev, Univ. of Houston (United States); E. Yeniaras, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States); I. Uyanik, M. Unan, E. L. Leiss, Univ. of Houston (United States)
- 9067 1M Securing palmprint authentication systems using spoof detection approach [9067-77] V. Kanhangad, A. Kumar, Indian Institute of Technology Indore (India)
- 9067 1N Application of discriminative models for interactive query refinement in video retrieval [9067-78]

A. Srivastava, S. Khanwalkar, A. Kumar, Raytheon BBN Technologies (United States)

- 9067 10 DTCWT based high capacity steganography using coefficient replacement and adaptive scaling [9067-79]
 N. Sathisha, S K S J Technological Institute (India); R. Priya, C M R Institute of Technology (India); K. S. Babu, K. B. Raja, K. R. Venugopal, Bangalore Univ. (India); L. M. Patnaik, Indian Institute of Science (India)
- 9067 1P Face recognition using transform domain texture features [9067-80]
 R. Y., Alpha College of Engineering (India); R. S K, SJC Institute of Technology (India);
 K. B. Raja, UVCE (India); V. K. R., Univ. Visvesvaraya (India); L. M. Patnaik, Indian Institute of Science (India)
- 9067 1Q A new approach for vehicle color recognition based on specular-free image [9067-81]
 W. Hu, J. Yang, Shanghai Jiao Tong Univ. (China); L. Bai, Univ. of Nottingham (United Kingdom); L. Yao, Shanghai Jiao Tong Univ. (China)
- 9067 1R An analysis of inhibitory pseudo-interconnections in unsupervised neural networks [9067-82] N. D.-H. Le, M.-T. Tran, Univ. of Science (Vietnam) and John von Neumann Institute (Vietnam)

- 9067 1S An improved background subtraction approach in target detection and tracking [9067-85] H. Lai, Y. Zhu, Z. Nong, Peking Univ. (China)
- 9067 1T **Realtime hand detection system using convex shape detector in sequential depth images** [9067-86] C.-L. Tai, C.-C. Li, D.-L. Liao, Industrial Technology Research Institute (Taiwan)
- 9067 1U Saliency based skin detection in complex scenes [9067-88]
 K. Ahmad, N. Ahmad, Univ. of Engineering & Technology, Peshawar (Pakistan); R. U. Khan,
 A. H. Khalil, Univ. of Engineering & Technology, Mardan (Pakistan)
- 9067 1V
 Video geographic information system using mobile mapping in mobilephone camera [9067-89]
 J. Kang, J. Lee, Ajou Univ. (Korea, Republic of)
- 9067 1W Ground-based visual guidance in autonomous UAV landing [9067-90]
 Y. Zhang, L. Shen, Y. Cong, D. Zhou, D. Zhang, National Univ. of Defense Technology (China)
- 9067 1X **The decoding method based on wavelet image** ^{*E*_n} **vector quantization** [9067-91] C. Liu, H. Li, T. Wang, Harbin Univ. of Commerce (China)
- 9067 1Y **Determining noise performance of co-occurrence GMuLBP on object detection task** [9067-93] N. Alpaslan, M. M. Turhan, D. Hanbay, Inonu Univ. (Turkey)
- 9067 1Z Completeness set proof of precondition and post-condition types of activity in any EPM [9067-102] O Yu T Li Lliu Y Zhang X Yu YunNan Univ (Ching)

Q. Yu, T. Li, J. Liu, X. Zhang, Y. Yu, YunNan Univ. (China)

- 9067 20 Tangent bundle Manifold Learning for image analysis [9067-103] A. P. Kuleshov, Kharkevich Institute for Information Transmission Problems (Russian Federation) and National Research Univ. (Russian Federation); A. V. Bernstein, Kharkevich Institute for Information Transmission Problems (Russian Federation), National Research Univ. (Russian Federation), and Moscow Institute of Physics and Technology (Russian Federation)
- 9067 21 Similarity measures for pattern matching on-the-fly [9067-104] U. Caluori, K. Simon, Swiss Federal Labs. for Materials Testing and Research (Switzerland)
- 9067 22 Simulation analysis and design on the structure of electromagnetic dumping device [9067-105] X.-N. Chen, B. Zhang, Y. Geng, W.-X. Zhu, PLA Univ. of Science & Technology (China)
- 9067 23 Gender classification from neutral and expressive faces [9067-106] Y. Andreu, P. García-Sevilla, R. A. Mollineda, Univ. Jaume I (Spain)
- 9067 24 **Fast optical flow estimation based on multi-grid** [9067-107] X. Li, S. Jia, J. Tan, X. Yin, Beijing Univ. of Technology (China)
- 9067 25 **Conditional fault-tolerant cycles in folded hypercubes with faulty elements** [9067-108] J.-W. Zheng, D. Guo, R.-F. Liang, Guangdong Univ. of Technology (China)

- 9067 27 **Exploiting context in kernel-mapping recommender system algorithms** [9067-111] M. A. Ghazanfar, Univ. of Engineering and Technology (Pakistan); A. Prügel-Bennett, Univ. of Southampton (United Kingdom)
- 9067 28 A relay selection algorithm for radio and television services based on time-delay and bandwidth [9067-112]
 C. Zhang, Beijing Forestry Univ. (China) and Lab. of Network System Architecture and Convergence (China); M. Wu, L. Luan, C. Xu, Lab. of Network System Architecture and Convergence (China)
- 9067 29 Study on dynamic services composition of web services based on BPEL [9067-113] J. Gao, Suzhou Vocational Univ. (China); F. Huang, G. Zhang, Nanjing Univ. of Science and Technology (China)
- 9067 2A Automatic music genres classification as a pattern recognition problem [9067-114]
 I. UI Haq, F. Khan, S. Sharif, A. Shaukat, National Univ. of Sciences and Technology (Pakistan)
- 9067 2B **Predicting performance interference of application in virtualized environments** [9067-115] Y. Dai, L. Yang, H. Xing, B. Zhang, Northeastern Univ. (China)
- 9067 2C A combined SIFT/SURF descriptor for automatic face recognition [9067-116] L. Lenc, P. Král, Univ. of West Bohemia (Czech Republic)
- 9067 2D Classifying imbalanced data using an Svm ensemble with k-means clustering in semiconductor test process [9067-117]
 E. Park, J. Lee, Sungkyunkwan Univ. (Korea, Republic of)
- 9067 2E **Design of personalized search engine based on user-webpage dynamic model** [9067-118] J. Li, S. Li, Y. Zhu, B. Xiao, Beijing Univ. of Posts and Telecommunications (China)
- 9067 2F An effective self-assessment based on concept map extraction from test-sheet for personalized learning [9067-119]
 K.-H. Liew, Y.-S. Lin, National Cheng Kung Univ. (Taiwan); Y.-C. Chang, Hungkuang Univ. (Yemen); C.-P. Chu, National Cheng Kung Univ. (Taiwan)
- 9067 2G Corpus analysis and automatic detection of emotion-including keywords [9067-120] B. Yuan, X. He, Y. Liu, Tsinghua Univ. (China)
- 9067 2H On the Laplacian model for particle-based simulation using Moving-Particle Semi-implicit (Mps) Method [9067-121] K. Ng, Univ. Tenaga Nasional (Malaysia); T. W.-H. Sheu, National Taiwan Univ. (Taiwan);
- 9067 21 SPMBR: a scalable algorithm for mining sequential patterns based on bitmaps [9067-122] X. Xu, C. Zhang, Weifang Vocational College (China)

Author Index

Conference Committees

Honorary Chairs

Antanas Verikas, Halmstad University (Sweden) K.M.Gupta, Motilal Nehru National Institute of Technology (India)

Conference Chairs

Branislav Vuksanovic, University of Portsmouth, Portsmouth (United Kingdom)
Maode Ma, Nanyang Technological University (Singapore)
Adrian Olaru, University Politehnica of Bucharest (Romania)

Program Committee

Wang Yulin, Wuhan University (China)
Andreas Nüchter, Jacobs Universität (Germany)
Huang Lin, Metropolitan State University of Denver (United States)

Technical Committee

Alexander Bernstein, National Research University Higher School of Economics (Russian Federation) Rubita Sudirman, University of Technology, Malaysia (Malaysia) laus Simon, Swiss Federal Laboratories for Materials Testing and Research (EMPA) (Switzerland) A. K. Jain, Michigan State University (United States) Wafa' AlSharafat, Al Al-Bayt University (Jordan) A. Skowron, Warsaw University, Warsaw (Poland) Mohamed El-Sayed Farag, Al-Azhar University (Egypt) H. Bunke, Institute of Computer Science and Applied Mathematics (IAM) (Switzerland) Li Jun, Chongqing University (China) Jianxiong WANG, Guangzhou University (China) J. Keller, University of Missouri (United States) Murat Orhun, Istanbul Bilgi University, Istanbul (Turkey) L. A. Zadeh, University of California, Berkeley (United States) Anrong Xue, Jiangsu University (China) L. Kanal, University of Maryland (United States) Cristina Ofelia Stanciu, Tibiscus University in Timisoara (Romania) **M. Jambu**, CIMPA (France) Chi-Cheng Cheng, National Sun Yat-Sen University (Taiwan) **R. Chellappa**, University of Maryland (United States)

Introduction

Dear Distinguished Delegates and Guests,

The Organizing Committee warmly welcomes our distinguished delegates and guests to the 2013 The 6th International Conference on Machine Vision (ICMV 2013) held on November 16-17, 2013, London, United Kingdom.

The ICMV 2013 is organized and sponsored by Science and Engineering Institute (SCIEI) and many other universities all around the world. The ICMV 2013 is organized to gather members of our international community of scientists so that researchers from around the world can present their cutting-edge work: expanding our community's knowledge and insight into the significant challenges currently being addressed in that research. The conference Program Committee is itself quite diverse and truly international with membership from the Americas, Europe, Asia, Africa, and Oceania.

These proceedings record the fully refereed papers presented at the conference. The main conference themes and tracks are Machine Vision. The main goal of these events is to provide international scientific forums for exchange of new ideas in a number of fields that interact in-depth through discussions with their peers from around the world. Both inward research; core areas of Machine Vision and outward research; multi-disciplinary, inter-disciplinary, and applications will be covered during these events.

The conference has solicited and gathered technical research submissions related to all aspects of major conference themes and tracks. All the submitted papers in the proceedings have been peer reviewed by reviewers drawn from the scientific committee, external reviewers, and editorial board depending on the subject matter of the paper. Reviewing and initial selection were undertaken electronically. After the rigorous peer-review process, the submitted papers were selected on the basis of originality, significance, and clarity for the purpose of the conference. The selected papers and additional late-breaking contributions to be presented as lectures will make an exciting technical program. The conference program is extremely rich, featuring high-impact presentations.

The high quality of the program-guaranteed by the presence of an unparalleled number of internationally recognized top experts-can be assessed when reading the contents of the program. The conference will therefore be a unique event where attendees will be able to appreciate the latest results in their field of expertise, and to acquire additional knowledge in other fields. The program has been structured to favor interactions among attendees coming from many diverse horizons, scientifically, geographically, from academia and from industry. We also provide social events during the conference to encourage positive interactions.

We would like to thank the program chairs, organization staff, and the members of the program committees for their work.

We are grateful to all those who have contributed to the success of ICMV 2013. We hope that all participants and other interested readers benefit scientifically from the proceedings and also find it stimulating in the process. Finally, we would like to wish you success in your technical presentations and social networking.

We hope you have a unique, rewarding and enjoyable weekend at ICMV 2013 in London, United Kingdom.

With our warmest regards,

Antanas Verikas Branislav Vuksanovic Jianhong Zhou