# Contents – Part I

### ST: Computational Bioimaging

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graph-Based Visualization of Neuronal Connectivity Using Matrix Block Partitioning and Edge Bundling</td>
<td>3</td>
</tr>
<tr>
<td>Tim McGraw</td>
<td></td>
</tr>
<tr>
<td>Fuzzy Skeletonization Improves the Performance of Characterizing Trabecular Bone Micro-architecture</td>
<td>14</td>
</tr>
<tr>
<td>Cheng Chen, Dakai Jin, and Punam K. Saha</td>
<td></td>
</tr>
<tr>
<td>Thermal Infrared Image Processing to Assess Heat Generated by Magnetic Nanoparticles for Hyperthermia Applications</td>
<td>25</td>
</tr>
<tr>
<td>Visualization Techniques for the Developing Chicken Heart</td>
<td>35</td>
</tr>
<tr>
<td>Ly Phan, Cindy Grimm, and Sandra Rugonyi</td>
<td></td>
</tr>
<tr>
<td>InVesalius: An Interactive Rendering Framework for Health Care Support</td>
<td>45</td>
</tr>
<tr>
<td>Paulo Amorim, Thiago Moraes, Jorge Silva, and Helio Pedrini</td>
<td></td>
</tr>
</tbody>
</table>

### Computer Graphics

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>As-Rigid-As-Possible Character Deformation Using Point Handles</td>
<td>57</td>
</tr>
<tr>
<td>Zhiping Luo, Remco C. Veltkamp, and Arjan Egges</td>
<td></td>
</tr>
<tr>
<td>Image Annotation Incorporating Low-Rankness, Tag and Visual Correlation and Inhomogeneous Errors</td>
<td>71</td>
</tr>
<tr>
<td>Yuqing Hou</td>
<td></td>
</tr>
<tr>
<td>Extracting Surface Geometry from Particle-Based Fracture Simulations</td>
<td>82</td>
</tr>
<tr>
<td>Chakrit Watcharopas, Yash Sapra, Robert Geist, and Joshua A. Levine</td>
<td></td>
</tr>
<tr>
<td>Time-Varying Surface Reconstruction of an Actor’s Performance</td>
<td>92</td>
</tr>
<tr>
<td>Ludovic Blache, Mathieu Desbrun, Céline Loscos, and Laurent Lucas</td>
<td></td>
</tr>
<tr>
<td>Interactive Procedural Building Generation Using Kaleidoscopic Iterated Function Systems</td>
<td>102</td>
</tr>
<tr>
<td>Tim McGraw</td>
<td></td>
</tr>
</tbody>
</table>
Motion and Tracking

Motion Priors Estimation for Robust Matching Initialization in Automotive Applications ........................................... 115
Nolang Fanani, Marc Barnada, and Rudolf Mester

Multi-target Tracking Using Sample-Based Data Association for Mixed Images .................................................. 127
Ting-hao Zhang, Hsiao-Tzu Chen, and Chih-Wei Tang

A Hierarchical Frame-by-frame Association Method Based on Graph Matching for Multi-object Tracking .................. 138
Sourav Garg, Ehtesham Hassan, Swagat Kumar, and Prithwijit Guha

Experimental Evaluation of Rigid Registration Using Phase Correlation Under Illumination Changes ....................... 151
Alfonso Alba and Edgar Arce-Santana

Multi-modal Computer Vision for the Detection of Multi-scale Crowd Physical Motions and Behavior in Confined Spaces 162
Zoheir Sabeur, Nikolaos Doulamis, Lee Middleton, Banafshe Arbab-Zavar, Gianluca Correndo, and Aggelos Amditis

HMM Based Evaluation of Physical Therapy Movements Using Kinect Tracking .................................................... 174
Carlos Palma, Augusto Salazar, and Francisco Vargas

Segmentation

Segmentation of Partially Overlapping Nanoparticles Using Concave Points ...................................................... 187
Sahar Zafari, Tuomas Eerola, Jouni Sampo, Heikki Kälviäinen, and Heikki Haario

Temporally Object-Based Video Co-segmentation ......................................................... 198
Michael Ying Yang, Matthias Reso, Jun Tang, Wentong Liao, and Bodo Rosenhahn

An Efficient Non-parametric Background Modeling Technique with CUDA Heterogeneous Parallel Architecture ................ 210
Brandon Wilson and Alireza Tavakkoli

Finding the N-cuts of Watershed Partitions for Image Segmentation ................................................................. 221
Chao Zhang and Sokratis Makrogiannis

A Novel Word Segmentation Method Based on Object Detection and Deep Learning ........................................... 231
Tomas Wilkinson and Anders Brun
Recognition

Estimating the Dominant Orientation of an Object Using Image Segmentation and Principal Component Analysis ........................................... 243
   Sravan Bhagavatula and Nashlie Sephus

Label Propagation for Large Scale 3D Indoor Scenes .............................. 253
   Keke Tang, Zhe Zhao, and Xiaoping Chen

Symmetry Similarity of Human Perception to Computer Vision Operators . . . . 265
   Peter M. Forrest and Mark S. Nixon

UT-MARO: Unscented Transformation and Matrix Rank Optimization for Moving Objects Detection in Aerial Imagery ............................. 275
   Agwad ElTantawy and Mohamed S. Shehata

Architectural Style Classification of Building Facade Towers .................. 285
   Gayane Shalunts

Visualization

Visualizing Document Image Collections Using Image-Based Word Clouds . . . 297
   Tomas Wilkinson and Anders Brun

Guided Structure-Aligned Segmentation of Volumetric Data ....................... 307
   Michelle Holloway, Anahita Sanandaji, Deniece Yates, Amali Krigger, Ross Sowell, Ruth West, and Cindy Grimm

Examining Classic Color Harmony Versus Translucency Color Guidelines for Layered Surface Visualization ................................................. 318
   Sussan Einakian and Timothy S. Newman

Guidance on the Selection of Central Difference Method Accuracy in Volume Rendering ................................................................. 328
   Kazuhiro Nagai and Paul Rosen

Deep Learning of Neuromuscular Control for Biomechanical Human Animation .......................................................... 339
   Masaki Nakada and Demetri Terzopoulos

NEURONAV: A Tool for Image-Guided Surgery - Application to Parkinson’s Disease ................................................................. 349
   José Bestier Padilla, Ramiro Arango, Hernán F. García, Hernán Dario Vargas Cardona, Álvaro A. Orozco, Mauricio A. Álvarez, and Enrique Guijarro
ST: 3D Mapping, Modeling and Surface Reconstruction

Generation of 3D/4D Photorealistic Building Models. The Testbed Area for 4D Cultural Heritage World Project: The Historical Center of Calw (Germany) .......................................................... 361
José Balsa-Barreiro and Dieter Fritsch

Visual Autonomy via 2D Matching in Rendered 3D Models ................. 373
D. Tenorio, V. Rivera, J. Medina, A. Leondar, M. Gaumer, and Z. Dodds

Reconstruction of Face Texture Based on the Fusion of Texture Patches . . 386
Jérôme Manceau, Renaud Séguier, and Catherine Soladié

Human Body Volume Recovery from Single Depth Image ..................... 396
Jaeho Yi, Seungkyu Lee, Sujung Bae, and Moonsik Jeong

Dense Correspondence and Optical Flow Estimation Using Gabor, Schmid and Steerable Descriptors .................................................. 406
Ahmadreza Baghaie, Roshan M. D’Souza, and Zeyun Yu

ST: Advancing Autonomy for Aerial Robotics

Efficient Algorithms for Indoor MAV Flight Using Vision and Sonar Sensors ......................................................... 419
Kyungnam Kim, David J. Huber, Jiejun Xu, and Deepak Khosla

Victim Detection from a Fixed-Wing UAV: Experimental Results ........ 432
Anurag Sai Vempati, Gabriel Agamennoni, Thomas Stastny, and Roland Siegwart

Autonomous Robotic Aerial Tracking, Avoidance, and Seeking of a Mobile Human Subject ................................................. 444
Christos Papachristos, Dimos Tzoumanikas, Kostas Alexis, and Anthony Tzes

Inspection Operations Using an Aerial Robot Powered-over-Tether by a Ground Vehicle ...................................................... 455
Lida Zikou, Christos Papachristos, Kostas Alexis, and Anthony Tzes

Autonomous Guidance for a UAS Along a Staircase ......................... 466
Olivier De Meyst, Thijs Goethals, Haris Balta, Geert De Cubber, and Rob Haelterman

Nonlinear Controller of Quadcopters for Agricultural Monitoring ....... 476
Víctor H. Andaluz, Edison López, David Manobanda, Franklin Guamushig, Fernando Chicaiza, Jorge S. Sánchez, David Rivas, Fabricio Pérez,Carlos Sánchez, and Vicente Morales
Medical Imaging

Groupwise Shape Correspondences on 3D Brain Structures
Using Probabilistic Latent Variable Models .......................... 491
   Hernán F. García, Mauricio A. Álvarez, and Álvaro Orozco

Automatic Segmentation of Extraocular Muscles Using Superpixel
and Normalized Cuts ...................................................... 501
   Qi Xing, Yifan Li, Brendan Wiggins, Joseph L. Demer, and Qi Wei

More Usable V-EGI for Volumetric Dataset Registration ............... 511
   Chun Dong and Timothy S. Newman

A Robust Energy Minimization Algorithm for MS-Lesion Segmentation .... 521
   Zhaoxuan Gong, Dazhe Zhao, Chunming Li, Wenjun Tan,
   and Christos Davatzikos

Impact of the Number of Atlases in a Level Set Formulation
of Multi-atlas Segmentation ............................................. 531
   Yihua Song, Zhaoxuan Gong, Dazhe Zhao, Chaolu Feng,
   and Chunming Li

Probabilistic Labeling of Cerebral Vasculature on MR Angiography ......... 538
   Benjamin Quachtran, Sunil Sheth, Jeffrey L. Saver, David S. Liebeskind,
   and Fabien Scalzo

Virtual Reality

Lateral Touch Detection and Localization for Interactive,
Augmented Planar Surfaces ............................................ 551
   A. Ntelidakis, X. Zabulis, D. Grammenos, and P. Koutlemanis

A Hybrid Real-Time Visual Tracking Using Compressive RGB-D Features ...
   Mengyuan Zhao, Heng Luo, Ahmad P. Tafti, Yuanchang Lin,
   and Guotian He

High-Quality Consistent Illumination in Mobile Augmented Reality
by Radiance Convolution on the GPU ................................ 574
   Peter Kán, Johannes Unterguggenberger, and Hannes Kaufmann

Efficient Hand Articulations Tracking Using Adaptive Hand Model
and Depth Map .......................................................... 586
   Byeongkeun Kang, Yeejin Lee, and Truong Q. Nguyen

Eye Gaze Correction with a Single Webcam Based on Eye-Replacement .... 599
   Yalun Qin, Kuo-Chin Lien, Matthew Turk, and Tobias Höllerer
ST: Observing Humans

Gradient Local Auto-Correlations and Extreme Learning Machine for Depth-Based Activity Recognition ........................................ 613  
Chen Chen, Zhenjie Hou, Baochang Zhang, Junjun Jiang, and Yun Yang

An RGB-D Camera Based Walking Pattern Detection Method for Smart Rollators ......................................................... 624  
He Zhang and Cang Ye

Evaluation of Vision-Based Human Activity Recognition in Dense Trajectory Framework .................................................. 634  
Hirokatsu Kataoka, Yoshimitsu Aoki, Kenji Iwata, and Yutaka Satoh

Analyzing Activities in Videos Using Latent Dirichlet Allocation and Granger Causality ..................................................... 647  
Dalwinder Kular and Eraldo Ribeiro

Statistical Adaptive Metric Learning for Action Feature Set Recognition in the Wild ......................................................... 657  
Shuanglu Dai and Hong Man

ST: Spectral Imaging Processing

Learning Discriminative Spectral Bands for Material Classification ................................................................. 671  
Chao Liu, Sandra Skaff, and Manuel Martinello

A Deep Belief Network for Classifying Remotely-Sensed Hyperspectral Data ............................................................... 682  
Justin H. Le, Ali Pour Yazdanpanah, Emma E. Regentova, and Venkatesan Muthukumar

Variational Inference for Background Subtraction in Infrared Imagery ................................................................. 693  
Konstantinos Makantasis, Anastasios Doulamis, and Konstantinos Loupos

Image Based Approaches for Tunnels’ Defects Recognition via Robotic Inspectors ...................................................... 706  
Eftychios Protopapadakis and Nikolaos Doulamis

Deep Learning-Based Man-Made Object Detection from Hyperspectral Data ............................................................... 717  
Konstantinos Makantasis, Konstantinos Karantzalos, Anastasios Doulamis, and Konstantinos Loupos

Hyperspectral Scene Analysis via Structure from Motion ................. 728  
Corey A. Miller and Thomas J. Walls
ST: Intelligent Transportation Systems

Detecting Road Users at Intersections Through Changing Weather Using RGB-Thermal Video ........................................ 741
Chris Bahnsen and Thomas B. Moeslund

Safety Quantification of Intersections Using Computer Vision Techniques . . 752
Mohammad Shokrolah Shirazi and Brendan Morris

Vehicles Detection in Stereo Vision Based on Disparity Map Segmentation and Objects Classification ........................................ 762
Djamila Dekkiche, Bastien Vincke, and Alain Mérigot

Traffic Light Detection at Night: Comparison of a Learning-Based Detector and Three Model-Based Detectors . . . . 774
Morten B. Jensen, Mark P. Philipsen, Chris Bahnsen, Andreas Møgelmose, Thomas B. Moeslund, and Mohan M. Trivedi

Modelling and Experimental Study for Automated Congestion Driving . . . 784
Joseph A. Urhahne, Patrick Piastowski, and Mascha C. van der Voort

Visualization

Aperio: A System for Visualizing 3D Anatomy Data Using Virtual Mechanical Tools ........................................ 797
T. McInerney and D. Tran

Quasi-Conformal Hybrid Multi-modality Image Registration and its Application to Medical Image Fusion ............... 809
K. Chun Lam and Lok Ming Lui

CINAPACT-Splines: A Family of Infinitely Smooth, Accurate and Compactly Supported Splines ........................................ 819
Bita Akram, Usman R. Alim, and Faramarz F. Samavati

Vis3D+: An Integrated System for GPU-Accelerated Volume Image Processing and Rendering ........................................ 830
I. Nisar and T. McInerney

Ontology-Based Visual Query Formulation: An Industry Experience .......... 842
Ahmet Soylu, Evgeny Kharlamov, Dmitriy Zheleznyakov, Ernesto Jimenez-Ruiz, Martin Giese, and Ian Horrocks

ST: Visual Perception and Robotic Systems

Dynamic Target Tracking and Obstacle Avoidance using a Drone .......... 857
Alexander C. Woods and Hung M. La
Contents – Part II

Applications

Hybrid Example-Based Single Image Super-Resolution .................. 3
Yang Xian, Xiaodong Yang, and Yingli Tian

Automated Habit Detection System: A Feasibility Study .................. 16
Hiroki Misawa, Takashi Obara, and Hitoshi Iyatomi

Conductor Tutoring Using the Microsoft Kinect ......................... 24
Andrea Salgian, Leighanne Hsu, Nathaniel Milkosky,
and David Vickerman

Lens Distortion Rectification Using Triangulation Based Interpolation .... 35
Burak Benligiray and Cihan Topal

A Computer Vision System for Automatic Classification of Most
Consumed Brazilian Beans .............................................. 45
S.A. Araújo, W.A.L. Alves, P.A. Belan, and K.P. Anselmo

3D Computer Vision

Stereo-Matching in the Context of Vision-Augmented Vehicles .......... 57
Waqar Khan and Reinhard Klette

A Real-Time Depth Estimation Approach for a Focused Plenoptic Camera ... 70
Ross Vasko, Niclas Zeller, Franz Quint, and Uwe Stilla

Range Image Processing for Real Time Hospital-Room Monitoring ........ 81
Alessandro Mecocci, Francesco Micheli, and Claudia Zoppetti

Real-Time 3-D Surface Reconstruction from Multiple Cameras ............ 93
Yongchun Liu, Huajun Gong, and Zhaoxing Zhang

Stereo Correspondence Evaluation Methods: A Systematic Review .......... 102
Camilo Vargas, Ivan Cabezas, and John W. Branch

Computer Graphics

Guided High-Quality Rendering ........................................... 115
Thorsten Roth, Martin Weier, Jens Maiero, André Hinkenjann,
and Yongmin Li
### User-Assisted Inverse Procedural Facade Modeling and Compressed Image Rendering

*Huilong Zhuo, Shengchuan Zhou, Bedrich Benes, and David Whittinghill*

Page 126

### Facial Fattening and Slimming Simulation Based on Skull Structure

*Masahiro Fujisaki and Shigeo Morishima*

Page 137

### Many-Lights Real Time Global Illumination Using Sparse Voxel Octree

*Che Sun and Emmanuel Agu*

Page 150

### WebPhysics: A Parallel Rigid Body Simulation Framework for Web Applications

*Robert (Bo) Li, Tasneem Brutch, Guodong Rong, Yi Shen, and Chang Shu*

Page 160

## Segmentation

### A Markov Random Field and Active Contour Image Segmentation Model for Animal Spots Patterns

*Alexander Gómez, German Diez, Jhony Giraldo, Augusto Salazar, and Juan M. Daza*

Page 173

### Segmentation of Building Facade Towers

*Gayane Shalunts*

Page 185

### Effective Information and Contrast Based Saliency Detection

*Aditi Kapoor, K.K. Biswas, and M. Hanmandlu*

Page 195

### Edge Based Segmentation of Left and Right Ventricles Using Two Distance Regularized Level Sets

*Yu Liu, Yue Zhao, Shuxu Guo, Shaoxiang Zhang, and Chunming Li*

Page 205

### Automatic Crater Detection Using Convex Grouping and Convolutional Neural Networks

*Ebrahim Emami, George Bebis, Ara Nefian, and Terry Fong*

Page 213

### ST: Biometrics

### Segmentation of Saimaa Ringed Seals for Identification Purposes

*Artem Zhelezniakov, Tuomas Eerola, Meeri Koivuniemi, Miina Auttila, Riikka Levänen, Marja Niemi, Mervi Kunnasranta, and Heikki Kälviäinen*

Page 227

### Fingerprint Matching with Optical Coherence Tomography

*Yaseen Moolla, Ann Singh, Ebrahim Saith, and Sharat Akhoury*

Page 237
Improve Non-graph Matching Feature-Based Face Recognition Performance by Using a Multi-stage Matching Strategy
Xianming Chen, Wenyin Zhang, Chaoyang Zhang, and Zhaoxian Zhou

Neighbors Based Discriminative Feature Difference Learning for Kinship Verification
Xiaodong Duan and Zheng-Hua Tan

A Comparative Analysis of Two Approaches to Periocular Recognition in Mobile Scenarios
João C. Monteiro, Rui Esteves, Gil Santos, Paulo Torrão Fiadeiro, Joana Lobo, and Jaime S. Cardoso

Applications

Visual Perception and Analysis as First Steps Toward Human–Robot Chess Playing
Andreas Schwenk and Chunrong Yuan

A Gaussian Mixture Representation of Gesture Kinematics for On-Line Sign Language Video Annotation
Fabio Martínez, Antoine Manzanera, Michèle Gouiffès, and Annelies Braffort

Automatic Affect Analysis: From Children to Adults
Rizwan Ahmed Khan, Alexandre Meyer, and Saida Bouakaz

A Study of Hand Motion/Posture Recognition in Two-Camera Views
Jingya Wang and Shahram Payandeh

Pattern Recognition

Automatic Verification of Properly Signed Multi-page Document Images
Marçal Rusiñol, Dimosthenis Karatzas, and Josep Lladós

CRFs and HCRFs Based Recognition for Off-Line Arabic Handwriting
Mofthah Elzobi, Ayoub Al-Hamadi, Laslo Dings, and Sherif El-etriby

Classifying Frog Calls Using Gaussian Mixture Models
Dalwinderjeet Kular, Kathryn Hollowood, Olatide Ommojaro, Katrina Smart, Mark Bush, and Eraldo Ribeiro

Ice Detection on Electrical Power Cables
Binglin Li, Gabriel Thomas, and Dexter Williams
Facial Landmark Localization Using Robust Relationship Priors and Approximative Gibbs Sampling ........................................ 365
   Karsten Vogt, Oliver Müller, and Jörn Ostermann

Recognition

Off-the-Shelf CNN Features for Fine-Grained Classification of Vessels in a Maritime Environment ........................................ 379
   Fouad Bousetouane and Brendan Morris

Joint Visual Phrase Detection to Boost Scene Parsing .................. 389
   Keke Tang, Zhe Zhao, and Xiaoping Chen

If We Did Not Have ImageNet: Comparison of Fisher Encodings and Convolutional Neural Networks on Limited Training Data ....... 400
   Christian Hentschel, Timur Pratama Wiradarma, and Harald Sack

Investigating Pill Recognition Methods for a New National Library of Medicine Image Dataset ............................................. 410
   Daniela Ushizima, Allan Carneiro, Marcelo Souza, and Fatima Medeiros

Realtime Face Verification with Lightweight Convolutional Neural Networks ................................................................. 420
   Nhan Dam, Vinh-Tiep Nguyen, Minh N. Do, Anh-Duc Duong, and Minh-Triet Tran

Virtual Reality

Relighting for an Arbitrary Shape Object Under Unknown Illumination Environment ........................................................... 433
   Yohei Ogura and Hideo Saito

Evaluation of Fatigue Measurement Using Human Motor Coordination for Gesture-Based Interaction in 3D Environments .............. 443
   Neera Pradhan, Angela Benavides, Qin Zhu, and Amy Ulinski Banic

JackVR: A Virtual Reality Training System for Landing Oil Rigs ........... 453
   Ahmed E. Mostafa, Kazuki Takashima, Mario Costa Sousa, and Ehud Sharlin

DAcImPro: A Novel Database of Acquired Image Projections and Its Application to Object Recognition .............................. 463
   Aleksandr Setkov, Fabio Martinez Carillo, Michèle Gouiffès, Christian Jacquemin, Maria Vanrell, and Ramon Baldrich
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deformable Object Behavior Reconstruction Derived Through Simultaneous Geometric and Material Property Estimation</td>
<td>474</td>
</tr>
<tr>
<td>Shane Transue and Min-Hyung Choi</td>
<td></td>
</tr>
<tr>
<td>Poster</td>
<td></td>
</tr>
<tr>
<td>Accidental Fall Detection Based on Skeleton Joint Correlation and Activity Boundary</td>
<td>489</td>
</tr>
<tr>
<td>Martha Magali Flores-Barranco, Mario-Alberto Ibarra-Mazano, and Irene Cheng</td>
<td></td>
</tr>
<tr>
<td>Generalized Wishart Processes for Interpolation Over Diffusion Tensor Fields</td>
<td>499</td>
</tr>
<tr>
<td>Hernán Darío Vargas Cardona, Mauricio A. Álvarez, and Álvaro A. Orozco</td>
<td></td>
</tr>
<tr>
<td>Spatio-Temporal Fusion for Learning of Regions of Interests Over Multiple Video Streams</td>
<td>509</td>
</tr>
<tr>
<td>Samaneh Khoshrou, Jaime S. Cardoso, Eric Granger, and Luís F. Teixeira</td>
<td></td>
</tr>
<tr>
<td>Patch Selection for Single Image Deblurring Based on a Coalitional Game and Edge Information</td>
<td>521</td>
</tr>
<tr>
<td>Jung-Hsuan Lin, Rong-Sheng Wang, and Jing-wei Wang</td>
<td></td>
</tr>
<tr>
<td>A Robust Real-Time Road Detection Algorithm Using Color and Edge Information</td>
<td>532</td>
</tr>
<tr>
<td>Jae-Hyun Nam, Seung-Hoon Yang, Woong Hu, and Byung-Gyu Kim</td>
<td></td>
</tr>
<tr>
<td>SeLibCV: A Service Library for Computer Vision Researchers</td>
<td>542</td>
</tr>
<tr>
<td>Ahmad P. Tafti, Hamid Hassannia, Dee Piziak, and Zeyun Yu</td>
<td></td>
</tr>
<tr>
<td>Bicycle Detection Using HOG, HSC and MLBP</td>
<td>554</td>
</tr>
<tr>
<td>Farideh Foroozandeh Shahraki, Ali Pour Yazdanpanah, Emma E. Regentova, and Venkatesan Muthukumar</td>
<td></td>
</tr>
<tr>
<td>On Calibration and Alignment of Point Clouds in a Network of RGB-D Sensors for Tracking</td>
<td>563</td>
</tr>
<tr>
<td>George Xu and Shahram Payandeh</td>
<td></td>
</tr>
<tr>
<td>Semantic Web Technologies for Object Tracking and Video Analytics</td>
<td>574</td>
</tr>
<tr>
<td>Benoit Gaiżère, Claudia Greco, Pierluigi Ritrovato, Alessia Saggese, and Mario Vento</td>
<td></td>
</tr>
<tr>
<td>Home Oriented Virtual e-Rehabilitation</td>
<td>586</td>
</tr>
<tr>
<td>Yogendra Patil, Iara Brandão, Guilherme Siqueira, and Fei Hu</td>
<td></td>
</tr>
<tr>
<td>WHAT2PRINT: Learning Image Evaluation</td>
<td>597</td>
</tr>
<tr>
<td>Bohao She and Clark F. Olson</td>
<td></td>
</tr>
</tbody>
</table>
Use of a Large Image Repository to Enhance Domain Dataset for Flyer Classification  
Payam Pourashraf and Noriko Tomuro  

Illumination Invariant Robust Likelihood Estimator for Particle Filtering Based Target Tracking  
Buti Al Delail, Harish Bhaskar, M. Jamal Zemerly, and Mohammed Al-Mualla  

Adaptive Flocking Control of Multiple Unmanned Ground Vehicles by Using a UAV  
Mohammad Jafari, Shamik Sengupta, and Hung Manh La  

Basic Study of Automated Diagnosis of Viral Plant Diseases Using Convolutional Neural Networks  
Yusuke Kawasaki, Hiroyuki Uga, Satoshi Kagiwada, and Hitoshi Iyatomi  

Efficient Training of Evolution-Constructed Features  
Meng Zhang and Dah-Jye Lee  

Ground Extraction from Terrestrial LiDAR Scans Using 2D-3D Neighborhood Graphs  
Yassine Belkhouche, Prakash Duraisamy, and Bill Buckles  

Mass Segmentation in Mammograms Based on the Combination of the Spiking Cortical Model (SCM) and the Improved CV Model  
Xiaoli Gao, Keju Wang, Yanan Guo, Zhen Yang, and Yide Ma  

High Performance and Efficient Facial Recognition Using Norm of ICA/Multiwavelet Features  
Ahmed Aldhahab, George Atia, and Wasfy B. Mikhael  

Dynamic Hand Gesture Recognition Using Generalized Time Warping and Deep Belief Networks  
Cristian A. Torres-Valencia, Hernán F. García, Germán A. Holguín, Mauricio A. Álvarez, and Álvaro Orozco  

Gaussian Processes for Slice-Based Super-Resolution MR Images  
Hernán Darío Vargas Cardona, Andrés F. López-Lopera, Álvaro A. Orozco, Mauricio A. Álvarez, Juan Antonio Hernández Tamames, and Norberto Malpica  

Congestion-Aware Warehouse Flow Analysis and Optimization  
Sawsan AlHalawani and Niloy J. Mitra
Building of Readable Decision Trees for Automated Melanoma Discrimination ................................................................. 712
Keiichi Ohki, M. Emre Celebi, Gerald Schaefer, and Hitoshi Iyatomi

A Novel Infrastructure for Supporting Display Ecologies .............. 722
Christian Eichner, Martin Nyolt, and Heidrun Schumann

Visualizing Software Metrics in a Software System Hierarchy ......... 733
Michael Burch

Region Growing Selection Technique for Dense Volume Visualization ... 745
Lionel B. Sakou, Daniel Wilches, and Amy Banic

Computing Voronoi Diagrams of Line Segments in \( \mathbb{R}^K \) in \( O(n \log n) \) Time .... 755
Jeffrey W. Holcomb and Jorge A. Cobb

Visualizing Aldo Giorgini’s Ideal Flow .................................... 767
Esteban Garcia Bravo and Tim McGraw

Restoration of Blurred-Noisy Images Through the Concept of Bilevel Programming .......... 776
Jessica Soo Mee Wong and Chee Seng Chan

Free-Form Tetrahedron Deformation ........................................ 787
Ben Kenwright

Innovative Virtual Reality Application for Road Safety Education of Children in Urban Areas ............................................ 797
Taha Ridene, Laure Leroy, and Safwan Chendeb

Vision-Based Vehicle Counting with High Accuracy for Highways with Perspective View .................................................. 809
Mohammad Shokrolah Shirazi and Brendan Morris

Automatic Motion Classification for Advanced Driver Assistance Systems . 819
Alok Desai, Dah-Jye Lee, and Shreeya Mody

Shared Autonomy Perception and Manipulation of Physical Device Controls ................................................................. 830
Matthew Rueben and William D. Smart

Condition Monitoring for Image-Based Visual Servoing Using Kalman Filter .............................................................. 842
Mien Van, Denglu Wu, Shuzi Sam Ge, and Hongliang Ren

Author Index ................................................................. 851
Advances in Visual Computing
2015, XXXVII, 926 p. 451 illus., 449 illus. in color., Softcover
ISBN: 978-3-319-27856-8