# Contents – Part I

**Full Papers Accepted for Oral Presentation**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D Sound Field Reproduction at Non Central Point for NHK 22.2 System.</td>
<td>3</td>
</tr>
<tr>
<td><em>Song Wang, Ruimin Hu, Shihong Chen, Xiaochen Wang, Yuhong Yang, Weiping Tu, and Bo Peng</em></td>
<td></td>
</tr>
<tr>
<td>A Comparison of Approaches for Automated Text Extraction from Scholarly Figures</td>
<td>15</td>
</tr>
<tr>
<td><em>Falk Böschen and Ansgar Scherp</em></td>
<td></td>
</tr>
<tr>
<td>A Convolutional Neural Network Approach for Post-Processing in HEVC Intra Coding</td>
<td>28</td>
</tr>
<tr>
<td><em>Yuanying Dai, Dong Liu, and Feng Wu</em></td>
<td></td>
</tr>
<tr>
<td>A Framework of Privacy-Preserving Image Recognition for Image-Based Information Services</td>
<td>40</td>
</tr>
<tr>
<td><em>Kojiro Fujii, Kazuaki Nakamura, Naoko Nitta, and Noboru Babaguchi</em></td>
<td></td>
</tr>
<tr>
<td>A Real-Time 3D Visual Singing Synthesis: From Appearance to Internal Articulators</td>
<td>53</td>
</tr>
<tr>
<td><em>Jun Yu</em></td>
<td></td>
</tr>
<tr>
<td>A Structural Coupled-Layer Tracking Method Based on Correlation Filters</td>
<td>65</td>
</tr>
<tr>
<td><em>Sheng Chen, Bin Liu, and Chang Wen Chen</em></td>
<td></td>
</tr>
<tr>
<td>Augmented Telemedicine Platform for Real-Time Remote Medical Consultation</td>
<td>77</td>
</tr>
<tr>
<td><em>David Anton, Gregorij Kurillo, Allen Y. Yang, and Ruzena Bajcsy</em></td>
<td></td>
</tr>
<tr>
<td>Color Consistency for Photo Collections Without Gamut Problems</td>
<td>90</td>
</tr>
<tr>
<td><em>Qi-Chong Tian and Laurent D. Cohen</em></td>
<td></td>
</tr>
<tr>
<td>Comparison of Fine-Tuning and Extension Strategies for Deep Convolutional Neural Networks</td>
<td>102</td>
</tr>
<tr>
<td><em>Nikiforos Pittaras, Foteini Markatopoulou, Vasileios Mezaris, and Ioannis Patras</em></td>
<td></td>
</tr>
<tr>
<td>Describing Geographical Characteristics with Social Images</td>
<td>115</td>
</tr>
<tr>
<td><em>Huangjie Zheng, Jiangchao Yao, and Ya Zhang</em></td>
<td></td>
</tr>
<tr>
<td>Fine-Grained Image Recognition from Click-Through Logs Using Deep Siamese Network</td>
<td>127</td>
</tr>
<tr>
<td><em>Wu Feng and Dong Liu</em></td>
<td></td>
</tr>
</tbody>
</table>
Fully Convolutional Network with Superpixel Parsing for Fashion Web Image Segmentation ............................................................... 139
Lixuan Yang, Helena Rodriguez, Michel Crucianu, and Marin Ferecatu

Graph-Based Multimodal Music Mood Classification in Discriminative Latent Space. ................................................................. 152
Feng Su and Hao Xue

Joint Face Detection and Initialization for Face Alignment ................ 164
Zhiwei Wang and Xin Yang

Large-Scale Product Classification via Spatial Attention Based CNN Learning and Multi-class Regression .............................. 176
Shanshan Ai, Caiyan Jia, and Zhineng Chen

Learning Features Robust to Image Variations with Siamese Networks for Facial Expression Recognition .............................. 189
Wissam J. Baddar, Dae Hoe Kim, and Yong Man Ro

M3LH: Multi-modal Multi-label Hashing for Large Scale Data Search. . 201
Guan-Qun Yang, Xin-Shun Xu, Shanqing Guo, and Xiao-Lin Wang

Model-Based 3D Scene Reconstruction Using a Moving RGB-D Camera ................................. 214
Shyi-Chyi Cheng, Jui-Yuan Su, Jing-Min Chen, and Jun-Wei Hsieh

Modeling User Performance for Moving Target Selection with a Delayed Mouse ........................................................................ 226
Mark Claypool, Ragnhild Eg, and Kjetil Raaen

Multi-attribute Based Fire Detection in Diverse Surveillance Videos .... 238
Shuangqun Li, Wu Liu, Huadong Ma, and Huiyuan Fu

Near-Duplicate Video Retrieval by Aggregating Intermediate CNN Layers . . . 251
Giorgos Kordopatis-Zilos, Symeon Papadopoulos, Ioannis Patras, and Yiannis Kompatsiaris

No-Reference Image Quality Assessment Based on Internal Generative Mechanism. ................................................................. 264
Xinchun Qian, Wengang Zhou, and Houqiang Li

On the Exploration of Convolutional Fusion Networks for Visual Recognition ................................................................. 277
Yu Liu, Yanming Guo, and Michael S. Lew

Phase Fourier Reconstruction for Anomaly Detection on Metal Surface Using Salient Irregularity ................................. 290
Tzu-Yi Hung, Sriram Vaikundam, Vidhya Natarajan, and Liang-Tien Chia
ReMagicMirror: Action Learning Using Human Reenactment with the Mirror Metaphor

Fabian Lorenzo Dayrit, Ryosuke Kimura, Yuta Nakashima, Ambrosio Blanco, Hiroshi Kawasaki, Katsushi Ikeuchi, Tomokazu Sato, and Naokazu Yokoya

Robust Image Classification via Low-Rank Double Dictionary Learning

Yi Rong, Shengwu Xiong, and Yongsheng Gao

Robust Scene Text Detection for Multi-script Languages Using Deep Learning

Ruo-Ze Liu, Xin Sun, Hailiang Xu, Palaiahnakote Shivakumara, Feng Su, Tong Lu, and Ruoyu Yang

Robust Visual Tracking Based on Multi-channel Compressive Features

Jianqiang Xu and Yao Lu

Single Image Super-Resolution with a Parameter Economic Residual-Like Convolutional Neural Network

Ze Yang, Kai Zhang, Yudong Liang, and Jinjun Wang

Spatio-Temporal VLAD Encoding for Human Action Recognition in Videos

Ionut C. Duta, Bogdan Ionescu, Kiyoharu Aizawa, and Nicu Sebe

Structure-Aware Image Resizing for Chinese Characters

Chengdong Liu, Zhouhui Lian, Yingmin Tang, and Jianguo Xiao

Supervised Class Graph Preserving Hashing for Image Retrieval and Classification

Lu Feng, Xin-Shun Xu, Shanqing Guo, and Xiao-Lin Wang

Visual Robotic Object Grasping Through Combining RGB-D Data and 3D Meshes

Yiyang Zhou, Wenhai Wang, Wenjie Guan, Yirui Wu, Heng Lai, Tong Lu, and Min Cai

What Convnets Make for Image Captioning?

Yu Liu, Yanming Guo, and Michael S. Lew


Ryo Kawahata, Atsushi Shimada, and Rin-ichiro Taniguchi
## SS1: Social Media Retrieval and Recommendation

Collaborative Dictionary Learning and Soft Assignment for Sparse Coding of Image Features ................................. 443  
*Jie Liu, Sheng Tang, and Yu Li*

LingoSent — A Platform for Linguistic Aware Sentiment Analysis for Social Media Messages ................................. 452  
*Yuting Su and Huijing Wang*

Multi-Task Multi-modal Semantic Hashing for Web Image Retrieval with Limited Supervision ................................. 465  
*Liang Xie, Lei Zhu, and Zhiyong Cheng*

Object-Based Aggregation of Deep Features for Image Retrieval. ........... 478  
*Yu Bao and Haojie Li*

Uyghur Language Text Detection in Complex Background Images Using Enhanced MSERs ................................. 490  
*Shun Liu, Hongtao Xie, Chuan Zhou, and Zhendong Mao*

## SS2: Modeling Multimedia Behaviors

CELoF: WiFi Dwell Time Estimation in Free Environment ............... 503  
*Chen Yan, Peng Wang, Haitian Pang, Lifeng Sun, and Shiqiang Yang*

Demographic Attribute Inference from Social Multimedia Behaviors:  
A Cross-OSN Approach. ..................................................... 515  
*Liancheng Xiang, Jitao Sang, and Changsheng Xu*

Understanding Performance of Edge Prefetching .......................... 527  
*Zhengyuan Pang, Lifeng Sun, Zhi Wang, Yuan Xie, and Shiqiang Yang*

User Identification by Observing Interactions with GUIs ................ 540  
*Zaher Hinbarji, Rami Albatal, and Cathal Gurrin*

Utilizing Locality-Sensitive Hash Learning for Cross-Media Retrieval  .... 550  
*Jia Yuhua, Bai Liang, Wang Peng, Guo Jinlin, Xie Yuxiang, and Yu Tianyuan*

## SS3: Multimedia Computing for Intelligent Life

A Sensor-Based Official Basketball Referee Signals Recognition System  
Using Deep Belief Networks ............................................... 565  
*Chung-Wei Yeh, Tse-Yu Pan, and Min-Chun Hu*
Compact CNN Based Video Representation for Efficient Video Copy Detection

Ling Wang, Yu Bao, Haojie Li, Xin Fan, and Zhongxuan Luo

Cross-Modal Recipe Retrieval: How to Cook this Dish?

Jingjing Chen, Lei Pang, and Chong-Wah Ngo

Deep Learning Based Intelligent Basketball Arena with Energy Image

Wu Liu, Jiangyu Liu, Xiaoyan Gu, Kun Liu, Xiaowei Dai, and Huadong Ma

Efficient Multi-scale Plane Extraction Based RGBD Video Segmentation

Hong Liu, Jun Wang, Xiangdong Wang, and Yueliang Qian

Human Pose Tracking Using Online Latent Structured Support Vector Machine

Kai-Lung Hua, Irawati Nurmala Sari, and Mei-Chen Yeh

Micro-Expression Recognition by Aggregating Local Spatio-Temporal Patterns

Shiyu Zhang, Bailan Feng, Zhineng Chen, and Xiangsheng Huang

egoPortray: Visual Exploration of Mobile Communication Signature from Egocentric Network Perspective

Qing Wang, Jiansu Pu, Yuanfang Guo, Zheng Hu, and Hui Tian

i-Stylist: Finding the Right Dress Through Your Social Networks

Jordi Sanchez-Riera, Jun-Ming Lin, Kai-Lung Hua, Wen-Huang Cheng, and Arvin Wen Tsui

SS4: Multimedia and Multimodal Interaction for Health and Basic Care Applications

Boredom Recognition Based on Users’ Spontaneous Behaviors in Multiparty Human-Robot Interactions

Yasuhiro Shibasaki, Kotaro Funakoshi, and Koichi Shinoda

Classification of sMRI for AD Diagnosis with Convolutional Neuronal Networks: A Pilot 2-D+/C15 Study on ADNI

Karim Aderghal, Manuel Boissenin, Jenny Benois-Pineau, Gwenaëlle Catheline, and Karim Afdel

Deep Learning for Shot Classification in Gynecologic Surgery Videos

Stefan Petscharnig and Klaus Schöffmann
Contents – Part II

Full Papers Accepted for Poster Presentation

A Comparative Study for Known Item Visual Search Using Position Color Feature Signatures ................................................................. 3
   Jakub Lokoč, David Kuboň, and Adam Blažek

A Novel Affective Visualization System for Videos Based on Acoustic and Visual Features ................................................................. 15
   Jianwei Niu, Yiming Su, Shasha Mo, and Zeyu Zhu

A Novel Two-Step Integer-pixel Motion Estimation Algorithm for HEVC Encoding on a GPU ................................................................. 28
   Keji Chen, Jun Sun, Zongming Guo, and Dachuan Zhao

A Scalable Video Conferencing System Using Cached Facial Expressions ................................................................. 37
   Fang-Yu Shih, Ching-Ling Fan, Pin-Chun Wang, and Cheng-Hsin Hsu

A Unified Framework for Monocular Video-Based Facial Motion Tracking and Expression Recognition ................................................................. 50
   Jun Yu

A Virtual Reality Framework for Multimodal Imagery for Vessels in Polar Regions ................................................................. 63
   Scott Sorensen, Abhishek Kolagunda, Andrew R. Mahoney, Daniel P. Zitterbart, and Chandra Kambhamettu

Adaptive and Optimal Combination of Local Features for Image Retrieval ................................................................. 76
   Neelanjan Bhowmik, Valérie Gouet-Brunet, Lijun Wei, and Gabriel Bloch

An Evaluation of Video Browsing on Tablets with the ThumbBrowser ................................................................. 89
   Marco A. Hudelist and Klaus Schoeffmann

Binaural Sound Source Distance Reproduction Based on Distance Variation Function and Artificial Reverberation ................................................................. 101
   Jiaawang Xu, Xiaochen Wang, Maosheng Zhang, Cheng Yang, and Ge Gao

Color-Introduced Frame-to-Model Registration for 3D Reconstruction ................................................................. 112
   Fei Li, Yunfan Du, and Rujie Liu

Compressing Visual Descriptors of Image Sequences ................................................................. 124
   Werner Bailer, Stefanie Wechtitsch, and Marcus Thaler
Deep Convolutional Neural Network for Bidirectional Image-Sentence Mapping .................................................. 136
Tianyuan Yu, Liang Bai, Jinlin Guo, Zheng Yang, and Yuxiang Xie

Discovering Geographic Regions in the City Using Social Multimedia and Open Data ........................................ 148
Stevan Rudinac, Jan Zahálka, and Marcel Worringer

Discovering User Interests from Social Images .......................... 160
Jiangchao Yao, Ya Zhang, Ivor Tsang, and Jun Sun

Effect of Junk Images on Inter-concept Distance Measurement: Positive or Negative? ................................. 173
Yusuke Nagasawa, Kazuki Nakamura, Naoko Nitta, and Noboru Babaguchi

Exploiting Multimodality in Video Hyperlinking to Improve Target Diversity ................................................. 185
Rémi Bois, Vedran Vukotić, Anca-Roxana Simon, Ronan Sicre, Christian Raymond, Pascale Sébillot, and Guillaume Gravier

Exploring Large Movie Collections: Comparing Visual Berrypicking and Traditional Browsing ..................... 198
Thomas Low, Christian Hentschel, Sebastian Stober, Harald Sack, and Andreas Nürnberg

Facial Expression Recognition by Fusing Gabor and Local Binary Pattern Features ........................................... 209
Yuechuan Sun and Jun Yu

Frame-Independent and Parallel Method for 3D Audio Real-Time Rendering on Mobile Devices ........................ 221
Yucheng Song, Xiaochen Wang, Cheng Yang, Ge Gao, Wei Chen, and Weiping Tu

Illumination-Preserving Embroidery Simulation for Non-photorealistic Rendering ............................................. 233
Qiqi Shen, Dele Cui, Yun Sheng, and Guixu Zhang

Improving the Discriminative Power of Bag of Visual Words Model .............................................................. 245
Achref Ouni, Thierry Urruty, and Muriel Visani

Jianwei Niu, Jun Ma, Jie Lu, Xuefeng Liu, and Zeyu Zhu

Movie Recommendation via BLSTM .................................................. 269
Song Tang, Zhiyong Wu, and Kang Chen
Multimodal Video-to-Video Linking: Turning to the Crowd for Insight
and Evaluation ................................................................. 280
   Maria Eskevich, Martha Larson, Robin Aly, Serwah Sabetghadam,
   Gareth J.F. Jones, Roeland Ordeman, and Benoit Huet

Online User Modeling for Interactive Streaming Image Classification .... 293
   Jiagao Hu, Zhengxing Sun, Bo Li, Kewei Yang, and Dongyang Li

Recognizing Emotions Based on Human Actions in Videos ............... 306
   Guolong Wang, Zheng Qin, and Kaiping Xu

Rocchio-Based Relevance Feedback in Video Event Retrieval ............ 318
   G.L.J. Pingen, M.H.T. de Boer, and R.B.N. Aly

Scale-Relation Feature for Moving Cast Shadow Detection ............... 331
   Chih-Wei Lin

Smart Loudspeaker Arrays for Self-Coordination and User Tracking .... 343
   Jungju Jee and Jung-Woo Choi

Spatial Verification via Compact Words for Mobile Instance Search .... 356
   Bo Wang, Jie Shao, Chengkun He, Gang Hu, and Xing Xu

Stochastic Decorrelation Constraint Regularized Auto-Encoder
for Visual Recognition ...................................................... 368
   Fengling Mao, Wei Xiong, Bo Du, and Lefei Zhang

The Perceptual Lossless Quantization of Spatial Parameter
for 3D Audio Signals .................................................................. 381
   Gang Li, Xiaochen Wang, Li Gao, Ruimin Hu, and Dengshi Li

Unsupervised Multiple Object Cosegmentation via Ensemble
MIML Learning .................................................................. 393
   Weichen Yang, Zhengxing Sun, Bo Li, Jiagao Hu, and Kewei Yang

Using Object Detection, NLP, and Knowledge Bases to Understand
the Message of Images ........................................................... 405
   Lydia Weiland, Ioana Hulpus, Simone Paolo Ponzetto, and Laura Dietz

Video Search via Ranking Network with Very Few Query Exemplars .... 419
   De Cheng, Lu Jiang, Yihong Gong, Nanning Zheng,
   and Alexander G. Hauptmann

Demonstrations

A Demo for Image-Based Personality Test .................................. 433
   Huaiwen Zhang, Jiaming Zhang, Jitao Sang, and Changsheng Xu
A Web-Based Service for Disturbing Image Detection .......................... 438
Markos Zampoglou, Symeon Papadopoulos, Yiannis Kompatsiaris,
and Jochen Spangenberg

An Annotation System for Egocentric Image Media ............................ 442
Aaron Duane, Jiang Zhou, Suzanne Little, Cathal Gurrin,
and Alan F. Smeaton

DeepStyleCam: A Real-Time Style Transfer App on iOS ..................... 446
Ryosuke Tanno, Shin Matsuo, Wataru Shimoda, and Keiji Yanai

V-Head: Face Detection and Alignment for Facial Augmented
Reality Applications .................................................. 450
Zhiwei Wang and Xin Yang

Video Browser Showdown

Collaborative Feature Maps for Interactive Video Search ...................... 457
Klaus Schoeffmann, Manfred Jürgen Primus, Bernd Muenzer,
Stefan Petscharnig, Christof Karisch, Qing Xu, and Wolfgang Huerst

Concept-Based Interactive Search System .................................... 463
Yi-Jie Lu, Phuong Anh Nguyen, Hao Zhang, and Chong-Wah Ngo

Enhanced Retrieval and Browsing in the IMOTION System .................... 469
Luca Rossetto, Ivan Giangreco, Claudiu Tănase, Heiko Schuldt,
Stéphane Dupont, and Omar Seddati

Semantic Extraction and Object Proposal for Video Search ................... 475
Vinh-Tiep Nguyen, Thanh Duc Ngo, Duy-Dinh Le, Minh-Triet Tran,
Duc Anh Duong, and Shin’ichi Satoh

Storyboard-Based Video Browsing Using Color and Concept Indices ........ 480
Wolfgang Hürt, Algernon Ip Vai Ching, Klaus Schoeffmann,
and Manfred J. Primus

VERGE in VBS 2017 .................................................................. 486
Anastasia Moumtzidou, Theodoros Mironidis, Fotini Markatopoulou,
Stelios Andreadis, Ilias Gialampoukidis, Damianos Galanopoulos,
Anastasia Ioannidou, Stefanos Vrochidis, Vasilietos Mezaris,
Ioannis Kompatsiaris, and Ioannis Patras

Video Hunter at VBS 2017 ............................................................ 493
Adam Blažek, Jakub Lokoč, and David Kuboň

Author Index .............................................................................. 499