ICMR 2015

The 2015 ACM International Conference on Multimedia Retrieval

Program Booklet

Association for Computing Machinery

SIGMM

JUNE 23-26, 2015
SHANGHAI, CHINA

Contents

Message from General and Program Chairs

Welcome to the 5th ACM International Conference on Multimedia Retrieval, ICMR 2015. ICMR is a premier conference in the area of multimedia retrieval, offering great opportunities for exchanging leading-edge multimedia retrieval ideas among researchers, practitioners and other potential users of multimedia retrieval systems. Multimedia computing, indexing and retrieval continues to be one of the most exciting and fastest-growing research areas in the field of multimedia technology. However, opportunities for the exchange of ideas among different groups of researchers, and between researchers and potential users of multimedia retrieval systems, are still limited. The conference, which puts together the long-lasting experience of former ACM CIVR and ACM MIR series, was initialized in 2011 to illuminate the state of the art in multi-media retrieval.

This year we received a record-high number of 244 submissions to the main conference from 35 countries. After a rigorous review process by the program committee members, 113 papers from 23 countries were accepted for presentation. Conflict-of-interest papers authored by the program chairs were handled separately by the general chairs, and those from the general chairs were handled by the program chairs. Details are as follows:

Track	*#Submissions*	*#Accepted*	*Acceptance Rate*
Full Papers	127	48	37.8%
Oral		25	19.7%
Poster		23	18.1%
Short Papers	84	34	40.5%
Special Session Papers	18	10	55.6%
Demonstrations	12	9	75%

In addition, 12 borderline full papers were recommended to be downgraded to short papers, so the total number of accepted short papers is 46. We also moved 3 accepted special session papers to the regular sessions due to the cancelation of two planned special sessions,

leading to a total number of 51 full papers in the regular program. The remaining 7 special session papers are presented in one special oral session and one special poster session.

The program also includes two tutorials and one workshop:

- Tutorial on “Social Multimedia Computing.”
- Tutorial on “Multimedia Quality Modeling: Theories and Applications.”
- Workshop on “Environmental Multimedia Retrieval.”

Putting together the program of ICMR 2015 was a team effort. We first thank the authors for submitting to ICMR. We are very grateful to the program committee members, who worked very hard in reviewing the papers and providing quality feedbacks to the authors. Finally, we thank the members of the organizing committee, ACM SIGMM, SIGMM China Chapter, and our generous corporate sponsors, Tencent, Samsung, Google and ViSENZE.

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Wei Zhang, (City University of Hong Kong)

Shiai Zhu, (University of Ottawa, Canada)

Program at a Glance

Tutorial & Workshop

June 23, Tue		
08:45 – 09:00	Registration	
09:00 – 11:00	EMR Workshop Meeting Room 5I	Tutorial 1 Social Multimedia Computing Meeting Room 5J
11:00 – 11:20	Coffee Break	
11:20 – 13:00	EMR Workshop Meeting Room 5I	Tutorial 1 Social Multimedia Computing Meeting Room 5J
13:00 – 14:20	Lunch (On your own)	
14:20 – 15:40	Tutorial 2 Multimedia Quality Modeling : Theories and Applications Meeting Room 5I	Tutorial 1 Social Multimedia Computing Meeting Room 5J
15:40 – 16:00	Coffee Break	
16:00 – 17:40	Tutorial 2 Multimedia Quality Modeling : Theories and Applications Meeting Room 5I	Tutorial 1 Social Multimedia Computing Meeting Room 5J

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Main Conference

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Analytical Methods for Multimedia Retrieval</td><td>Keynote 4</td></tr>
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<tr><td>19:00 – late</td><td>Reception
Pearl Room @ 7th floor, International Convention Center</td></tr>
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Keynote Talks

Keynote 1 (09:00 - 10:00, June 24, Wednesday)

Multimedia Retrieval: Are We Doing it Right?

Presenter

Tat-Seng Chua (National University of Singapore)

Session Chair

Chong-Wah Ngo

Abstract

Multimedia has long been associated with visual media by many researchers. While visual media is one of the most challenging medium to deal with, the use of visual analysis alone is often insufficient nor necessary to tackle many real-life problems. The current wisdom seems to suggest that for real-world problem solving, it is necessary to make fuller use of content information including text and audio, and various kinds of contextual information, such as the user's mobile device settings, social postings, check-in history etc., when available. This, for example, applies to social media and wellness research where a combination of text, visual, audio, health or other sensors, and public data are needed to fully analyze the problem. The second issue is the observation that big multimedia application ideas hardly come from the multimedia research communities. For example, many recent innovative applications in video like contextual advertising, live situational sensing, real-time news gathering, online navigation, wearable health devices, and personalized healthcare etc. have all come from the commercial world. While in research, we seem to barely even start on video research, as observed from the technical programs in recent ACM Multimedia and ACM ICMR conferences, where only a small fraction of visual papers is about video. This talk discusses issues in these two areas with examples, suggests directions to move forward as a research

community, and outlines approaches to make our community more inclusive. The talk, however, will open up more questions than answers.

Bio

Dr. Chua is the KITHCT Chair Professor at the School of Computing, National University of Singapore. He was the Acting and Founding Dean of the School during 1998-2000. Dr Chua's main research interest is in multimedia information retrieval and social media analysis. In particular, his research focuses on the extraction, retrieval and question-answering (QA) of text, video and live media arising from the Web and social networks. He is the Director of a multi-million-dollar joint Center between NUS and Tsinghua University in China to develop technologies for live media search. The project will gather, mine, search and organize user-generated contents within the cities of Beijing and Singapore. His group participated regularly in TREC-QA and TRECVID evaluations in early 2000.

Dr. Chua is active in the international research community. He has organized and served as program committee member of numerous international conferences in the areas of computer graphics, multimedia and text processing. He is the conference co-chair of ACM Multimedia 2005, ACM CIVR (now ACM ICMR) 2005, ACM SIGIR 2008, and ACM Web Science 2015. He serves in the editorial board of: ACM Transactions of Information Systems (ACM), Foundation and Trends in Information Retrieval (NOW), The Visual Computer (Springer Verlag), and Multimedia Tools and Applications (Kluwer). He is the Chair of steering committee of ICMR (International Conference on Multimedia Retrieval) and Multimedia Modeling conference series; and as member of International Review Panel of a large-scale research project in Europe. He is the co-Founder of two technology startup companies and an independent Director of a publicly listed company in Singapore.

Keynote 2 (09:00 - 10:00, June 25, Thursday)

Dense Models from Videos: Can YouTube be the Font of All Knowledge Bases?

Presenter

Michael Witbrock (Cycorp)

Session Chair

Alex Hauptmann

Abstract

Many recent advances in computer science have been driven by the convergent availability of large numbers of data and of fast machines on which to analyze them. This availability has enabled us to acquire implicit partial models of the underlying generators for the data and apply those models to tasks such as translation, transcription, and image captioning. To date, though, few if any of these models have been dense, in the sense of thoroughly modelling some aspect of the world in way that can facilitate any relevant task. Dense models should support:

a) Prediction: What might happen next in this situation, or what might be true in the vicinity?

b) Interpolation: What may have happened between these situations? What might be located between these things?

c) Causal reasoning: Why did this happen?

d) Purpose reasoning: What is this configuration of things for? For what purpose is that happening?

e) Task performance: The model should be able to aid (e.g.) a robot performing a domain task.

f) Explanation: The model should be at a level that supports communication.

In short, a dense model is the sort of model — including both implicit and explicit components — humans form about aspects of their worlds: aspects like meetings, plants, lawnmowers, rivers and kitchens. These models support pretty-much any kind of relevant reasoning.

These are also the sorts of models that builders of large-scale ”commonsense” knowledge bases have been working to construct. But, to date, although some such knowledge bases support particular instances of each kind of reasoning task, they do not approach doing so comprehensively, even within quite narrow domains. Although some work is being done on automating KB construction, this generally aims at breadth, rather than density.

Similarly, although machine vision and NLP researchers have long discussed the potential use of background knowledge in scene and text understanding, demonstrating that utility in any general way has been hampered by the vast incompleteness of available KBs.

The time is ripe for a 5-10 year AI challenge problem in production of dense models directly from data. As a particular example, kitchens are somewhat limited in complexity, from a human point of view, and are densely modelled by most humans; we are not frequently surprised by what we find in a kitchen, or by what happens there. And we are not lacking for data; there are more than 6 million YouTube hits for “kitchen”, around 5 million for cooking. If each was a mere 1 minute long, this represents 22 years of kitchen video. Dull perhaps, but also, presumably, enough grist for building a very dense model.

The proposed challenge is this: to have computers automatically build, from just the vast amount of video found on the web, a sufficiently dense local world model to enable that video to be thoroughly understood for prediction, interpolation, explanation and other tasks.

Bio

Michael Witbrock has a PhD in Computer Science from Carnegie Mellon University and a BSc Hons in Psychology from Otago University. He currently is Vice President for Research at Cycorp. Before joining Cycorp, in 2001, to direct its knowledge formation and dialogue processing efforts, he had been Principal Scientist at Terra Lycos, working on integrating statistical and knowledge based approaches to understanding web user behavior, a research scientist at Just Systems Pittsburgh Research Center, working on statistical summarization, and a systems

scientist at Carnegie Mellon on the Informedia visual and spoken document information retrieval project. His current research focuses on automated reading to inferentially-productive representations, application of background knowledge to video retrieval and to reasoning about the molecular biology literature, and automatic and semi-automatic knowledge capture and use, more broadly. He is author of numerous publications in areas ranging across computational linguistics, speech modelling and recognition, neural networks, automated inference, automated reading and multimedia information retrieval, and has dabbled in web browser design, genetic design and parallel computer architecture. As well as his technical work, Dr. Witbrock is very interested in entrepreneurship around AI and for social good, and in the social and economic outcomes of advances in AI. He is pursuing that latter interest, inter alia, via AI4Good.org.

Keynote 3 (09:00 - 10:00, June 26, Friday)

Is Real-World Visual Search Really Coming?

Presenter

Xian-Sheng Hua (Alibaba)

Session Chair

Yu-Gang Jiang

Abstract

Visual search has been studied for decades since 1990s and it was called “content-based image retrieval” in the beginning. It almost died in the early 21st century and then becomes very hot in recent years mainly due to the rapid development of distributed computing, high-dimensional indexing, deep learning and big data analytical techniques. Many visual search research prototypes and preliminary products are available to the public. However, is real-world visual search really coming? Have we solved all the big technical and non-technical challenges? Are semantic gaps and intention gaps still there, and do they really matter? Are people really using it and why do they want to use it? What are the users expecting? What is the right business model? Which direction that visual search is going towards? What are still missing? In this talk, we will discuss all these questions based on a real-world visual search engine that has a considerable number of users.

Bio

Dr. Xian-Sheng Hua became a Researcher and Senior Director of Alibaba Group in April of 2015, leading the multimedia technology team in the Search Division. Before that, he was a senior researcher of Microsoft Research Redmond since 2013, worked on Web-scale image and video understanding and search, as well as related applications. He was a Principal Research and Development Lead in Multimedia Search for the Microsoft search engine, Bing, since 2011, where he led a team that designed and delivered leading-edge media understand-

ing, indexing and searching features. He joined Microsoft Research Asia in 2001 as a researcher. Since then, his research interests have been in the areas of multimedia search, advertising, understanding, and mining, as well as pattern recognition and machine learning. He has authored or co-authored more than 250 research papers in these areas and has filed more than 90 patents. Dr Hua received his BS in 1996 and PhD in applied mathematics in 2001 from Peking University, Beijing. He served or is now serving as an associate editor of IEEE Transactions on Multimedia, an associate editor of ACM Transactions on Intelligent Systems and Technology, an editorial board member of Advances in Multimedia and Multimedia Tools and Applications, and an editor of Scholarpedia (multimedia category). He was vice program chair; workshop organizer; senior TPC member and area chair; and demonstration, tutorial, and special session chairs and PC member of many more international conferences. He served as a program co-chair for IEEE ICME 2013, ACM Multimedia 2012, and IEEE ICME 2012, as well as on the Technical Directions Board of IEEE Signal Processing Society. He was honored as one of the recipients of the prestigious 2008 MIT Technology Review TR35 Young Innovator Award for his outstanding contributions to video search. He won the Best Paper and Best Demonstration Awards at ACM Multimedia 2007, the Best Poster Award at IEEE International Workshop on Multimedia Signal Processing 2008, the Best Student Paper Award at ACM Conference on Information and Knowledge Management 2009, the Best Paper Award at International Conference on MultiMedia Modeling 2010, the best demonstration award at ICME 2014 and best paper award of IEEE Trans. On CSVT in 2014. He was named one of Global Entrepreneur's "Business Elites of People under 40 to Watch" in 2009.

Keynote 4 (10:20 - 11:20, June 26, Friday)

Trends of Multimedia Research and Application in Tencent Social Network

Presenter

Yongjian Wu (Tencent)

Session Chair

Yiannis Kompatsiaris

Abstract

On May 1st, 2015, Q-Zone users uploaded 650 million photos in one single day, which creates a new record and shows itself as one of the most influential photo platforms in China internet industry. Besides Q-Zone, there are many other platforms in Tencent with the massive data of multimedia, such as QQ, QQ music, Tencent Map and so on. Basing on these big platforms, BestImage team is one of the research teams in Tencent, who does research on big data of multimedia area and has made outstanding achievements on applying research results into products.

In this talk, firstly I'll introduce the development of image processing in both academy and industry in these years. Secondly, I'll introduce the multimedia business development in Tencent under the background of historical transition from PC internet to mobile internet. Thirdly, I'll demonstrate the achievements in face and image field, and shows while maintaining our research result in advance, how we find good way to combine research and application in company. Fourthly, I'll demonstrate how the positive interaction of data, technology and application, which plays a significant role in accelerating the team's development. In the last but not the least, I'll introduce future plan for our team.

Bio

Yongjian Wu is the team manager of BestImage team and a senior research fellow of Social Network Platform Department in Tencent. He Joined in Tencent in 2008 and has been working

on the multimedia research field, machine learning and high performance computing technology till now, and owns many international patents with the research results. With his leading on the research in multimedia, the research results have been widely used in many company-level products, such as Q-Zone, QQ Music, Tencent Map, Pitu and Webank, and have made many outstanding achievements inside and outside the company, such as Shanghai Technology Advanced Award, "Key Technology Breakthough Award" of Tencent in two consecutive years, and also been reported by many public media like CCTV, 36Kr.com and LeiPhone.com.

Invited Industry Talks

Date & Time: June 26, 11:20-12:20

Session Chair: Jialie Shen

Industry Talk 1

Title: From Perception to Intelligence

Presenter: Yong Zhao (CTO of DeepGlint)

Industry Talk 2

Title: Frontier of iQiyi's Big Data Practices

Presenter: Chen Yang (Chief Architect, iQIYI)

Panel Discussion

Title: Video Search in Big Data Era

Date & Time: June 25, 15:20-16:20

Organizers: Tat-Seng Chua (NUS, Singapore)

Lexing Xie (ANU, Australia)

Panel Facilitator: Alex Hauptmann (CMU, USA)

Abstract:

The popularity of smart mobile devices and social networks has resulted in a huge amount of data being shared on the Internet. In addition to YouTube and Flickr, several hugely popular newly emerging sites are largely video-based, including SnapChat and Vine. An increasingly higher proportion of information being shared on Internet is now in images/videos. We are now entering the era of big data for videos. Given the availability of many live, bigger quantity and higher variety of video data, how would this affect the ways we conduct research on video search? What metadata is now available and can be used to improve the analysis and search? Also, what role is there for content analysis if metadata is widely available? Finally, what new novel applications are possible or should be explored to take advantage of this trend?

This panel will examine these issues and discuss directions of video research and applications.

Main Conference Program

June 24, Wednesday

Wednesday, 08:45 – 09:00 **Location: Yangtze Hall (5F)**

Welcome and Introduction

Wednesday, 09:00 – 10:00 **Location: Yangtze Hall (5F)**

Keynote Speech 1

Session Chair: Chong-Wah Ngo

Wednesday, 10:00 – 10:20 **Location: Yangtze Hall (5F)**

Coffee Break

Wednesday, 10:20 – 12:00 **Location: Yangtze Hall (5F)**

Oral Session 1: Image Retrieval

Session Chair: Qi Tian

Fast Democratic Aggregation and Query Fusion for Image Search

Zhanning Gao *(Xi'an Jiaotong University)*

Jianru Xue *(Xi'an Jiaotong University)*

Wengang Zhou *(University of Science and Technology of China)*

Shanmin Pang *(Xi'an Jiaotong University)*

Qi Tian *(University of Texas at San Antonio)*

DeepIndex for Accurate and Efficient Image Retrieval

Yu Liu *(Leiden University)*

Yanming Guo *(Leiden University)*

Song Wu *(Leiden University)*

Michael S. Lew *(Leiden University)*

Effective, Efficient, and Scalable Unsupervised Distance Learning in Image Retrieval Tasks

Lucas Pascotti Valem *(Universidade Estadual Paulista)*

Daniel Carlos Guimarães Pedronette *(Universidade Estadual Paulista)*

Ricardo da S. Torres *(University of Campinas)*

Edson Borin *(University of Campinas)*

Jurandy Almeida *(Federal University of São Paulo)*

Twin Feature and Similarity Maximal Matching for Image Retrieval

Lei Wang *(Tongji University)*

Hanli Wang *(Tongji University)*

Fengkuangtian Zhu *(Tongji University)*

Fusing Pointwise and Pairwise Labels for Supporting User-adaptive Image Retrieval

Lin Chen *(Arizona State University)*

Peng Zhang *(Alibaba Group)*

Baoxin Li *(Arizona State University)*

Wednesday, 12:00 – 13:40 **Location: Riverside Hall (1F)**

Lunch

Wednesday, 13:40 – 15:00 **Location: Yangtze Hall (5F)**

Oral Session 2: Person and Objects

Session Chair: Rita Cucchiara

Facial Action Unit Classification with Hidden Knowledge under Incomplete Annotation

Jun Wang *(University of Science and Technology of China)*

Shangfei Wang *(University of Science and Technology of China)*

Qiang Ji *(Rensselaer Polytechnic Institute)*

Extracting 3D Trajectories of Objects from 2D Videos using Particle Filter

Zeyd Boukhers *(University of Siegen)*

Kimiaki Shirahama *(University of Siegen)*

Frédéric Li *(University of Siegen)*

Marcin Grzegorzek *(University of Siegen)*

Space-time Histograms and Their Application to Person Re-identification in TV Shows

Rémi Auguste *(Lille 1 University)*

Jean Martinet *(Lille 1 University)*

Pierre Tirilly *(Lille 1 University)*

Temporal Order-Preserving Dynamic Quantization for Human Action Recognition from Multi-modal Sensor Streams

Jun Ye *(University of Central Florida)*

Kai Li *(University of Central Florida)*

Guo-Jun Qi *(University of Central Florida)*

Kien A. Hua *(University of Central Florida)*

Wednesday, 15:00 – 15:20 **Location: Yangtze Hall (5F)**

Coffee Break

Wednesday, 15:20 – 16:40 **Location: Yangtze Hall (5F)**

Oral Session 3: Concepts

Session Chair: Alan Smeaton

Fine-Grained Image Categorization by Localizing Tiny Object Parts from Unannotated Images

Luming Zhang *(National University of Singapore)*

Yi Yang *(The University of Technology, Sydney)*

Roger Zimmermann *(National University of Singapore)*

Robust and Discriminative Concept Factorization for Image Representation

Yuchen Guo *(Tsinghua University)*

Guiguang Ding *(Tsinghua University)*

Jile Zhou *(Sohu Inc.)*

Qiang Liu *(Tsinghua University)*

Encoding Concept Prototypes for Video Event Detection and Summarization

Masoud Mazloom *(University of Amsterdam)*

Amirhossein Habibian *(University of Amsterdam)*

Dong Liu *(Columbia University)*

Cees G. M. Snoek *(University of Amsterdam & Qualcomm Research Netherlands)*

Shih-Fu Chang *(Columbia University)*

Discovering Semantic Vocabularies for Cross-Media Retrieval

Amirhossein Habibian *(University of Amsterdam)*

Thomas Mensink *(University of Amsterdam)*

Cees G. M. Snoek *(University of Amsterdam & Qualcomm Research Netherlands)*

Wednesday, 16:40 – 19:00 **Location: Outside of Yangtze Hall (5F)**

Short Paper Posters & Demos

Short Paper Posters

Session Chair: Marcel Worring

Content-based Image Retrieval Using Rotation-invariant Histograms of Oriented Gradients

Jinhui Chen *(Kobe University)*

Toru Nakashika *(Kobe University)*

Tetsuya Takiguchi *(Kobe University)*

Yasuo Ariki *(Kobe University)*

Augmented Feature Fusion for Image Retrieval System

Yang Zhou *(University of Texas at San Antonio)*

Dan Zeng *(Shanghai University)*

Shiliang Zhang *(University of Texas at San Antonio)*

Qi Tian *(University of Texas at San Antonio)*

Parallel AP Clustering and Re-ranking for Automatic Image-Text Alignment and Large-Scale Web Image Search

Yanyun Qu *(Xiamen University)*

Baopeng Zhang *(Beijing Jiaotong University)*

Jianping Fan *(University of North Carolina at Charlotte)*

Accio: A Data Set for Face Track Retrieval in Movies Across Age

Esam Ghaleb *(Istanbul Technical University)*

Makarand Tapaswi *(Karlsruhe Institute of Technology)*

ICMR 2015

Ziad Al-Halah *(Karlsruhe Institute of Technology)*

Hazım Kemal Ekenel *(Istanbul Technical University)*

Rainer Stiefelhagen *(Karlsruhe Institute of Technology)*

A Two-step Approach to Cross-modal Hashing

Kaiye Wang *(Chinese Academy of Sciences)*

Wei Wang *(Chinese Academy of Sciences)*

Liang Wang *(Chinese Academy of Sciences)*

Ran He *(Chinese Academy of Sciences)*

Cross-Scenario Eyeglasses Retrieval via EGYPT Model

Xiaoling Gu *(Zhejiang University)*

Pai Peng *(Zhejiang University)*

Mengwen Li *(Zhejiang University)*

Sai Wu *(Zhejiang University)*

Lidan Shou *(Zhejiang University)*

Gang Chen *(Zhejiang University)*

People News Search via Name-Face Association Analysis

Yong Cheng *(Fudan University)*

Zhixin Liu *(Fudan University)*

Yun Zhao *(Fudan University)*

Cheng Jin *(Fudan University)*

Yuejie Zhang *(Fudan University)*

Tao Zhang *(Shanghai University of Finance and Economics)*

Discovering the Latent Similarities of the KNN Graph by Metric Transformation

Zhenzhong Kuang *(China University of Petroleum)*

Zongmin Li *(China University of Petroleum)*

Jianping Fan *(University of North Carolina at Charlotte)*

Formation Period Matters: Towards Socially Consistent Group Detection via Dense Subgraph Seeking

Yanhao Zhang *(Harbin Institute of Technology)*

Lei Qin *(Chinese Academy of Sciences)*

Shengping Zhang *(Harbin Institute of Technology)*

Hongxun Yao *(Harbin Institute of Technology)*

Qingming Huang *(University of Chinese Academy of Sciences & Chinese Academy of Sciences)*

Memory Vectors for Particular Object Retrieval with Multiple Queries

Ronan Sicre *(INRIA)*

Hervé Jégou *(INRIA)*

Semantic-aware Hashing for Social Image Retrieval

Jinhui Tang *(Nanjing University of Science and Technology)*

Zechao Li *(Nanjing University of Science and Technology)*

Liyan Zhang *(Nanjing University of Aeronautics and Astronautics)*

Qingming Huang *(University of Chinese Academy of Sciences)*

Zero-shot Image Categorization by Image Correlation Exploration

LianLi Gao *(University of Electronic Science and Technology of China)*

Jingkuan Song *(University of Trento)*

Junming Shao *(University of Electronic Science and Technology of China)*

Xiaofeng Zhu *(Guangxi Normal University)*

Heng Tao Shen *(The University of Queensland)*

Deep Bottleneck Feature for Image Classification

Yan Song *(University of Science and Technology of China)*

Ian McLoughLin *(University of Science and Technology of China)*

Lirong Dai *(University of Science and Technology of China)*

Maximally Visual-Homogeneous Region Detector for Large Scale Image Retrieval

Gang Wang *(Chinese Academy of Sciences)*

Ke Gao *(Chinese Academy of Sciences)*

Jintao Li *(Chinese Academy of Sciences)*

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Rapid Clothing Retrieval via Deep Learning of Binary Codes and Hierarchical Search

Kevin Lin *(Academia Sinica)*

Huei-Fang Yang *(Academia Sinica)*

Kuan-Hsien Liu *(Academia Sinica)*

Jen-Hao Hsiao *(Yahoo)*

Chu-Song Chen *(Academia Sinica)*

Information Gain Study for Visual Vocabulary Construction

Huu Ton Le *(University of Poitiers)*

Syntyche Gbèhounou *(University of Poitiers)*

Thierry Urruty *(University of Poitiers)*

François Lecellier *(University of Poitiers)*

Christine Fernandez *(University of Poitiers)*

Discriminative Latent Feature Space Learning for Cross-Modal Retrieval

Xu Tang *(Xidian University)*

Cheng Deng *(Xidian University)*

Xinbo Gao *(Xidian University)*

Image Retrieval by User-oriented Ranking

Xueming Qian *(Xi'anJiaotong University)*

Dan Lu *(Xi'anJiaotong University)*

Xiaoxiao Liu *(Xi'anJiaotong University)*

Spatial Constraint for Image Location Estimation

Yisi Zhao *(Xi'an Jiaotong University)*

Xueming Qian *(Xi'an Jiaotong University)*

Shape-based Object Matching Using Point Context

Cong Yang *(University of Siegen)*

Christian Feinen *(University of Siegen)*

Oliver Tiebe *(University of Siegen)*

Kimiaki Shirahama *(University of Siegen)*

Marcin Grzegorzek *(University of Siegen)*

Large Scale Image Annotation via Deep Representation Learning and Tag Embedding Learning

Yonghao He *(Chinese Academy of Sciences)*

Jian Wang *(Chinese Academy of Sciences)*

Cuicui Kang *(Chinese Academy of Sciences)*

Shiming Xiang *(Chinese Academy of Sciences)*

Chunhong Pan *(Chinese Academy of Sciences)*

Probabilistic Matrix Factorization with Semantic and Visual Neighborhoods for Image Tag Completion

Dimitrios Rafailidis *(Aristotle University)*

Exploiting Multiple Web Resources towards Collecting Positive Training Samples for Visual Concept Learning

Olga Papadopoulou *(CERTH)*

Vasileios Mezaris *(CERTH)*

CRMActive: An Active Learning Based Approach for Effective Video Annotation and Retrieval

Moitreya Chatterjee *(University of Southern California)*

Anton Leuski *(University of Southern California)*

Personalized Egocentric Video Summarization for Cultural Experience

Patrizia Varini *(University of Modena and Reggio Emilia)*

Giuseppe Serra *(University of Modena and Reggio Emilia)*

Rita Cucchiara *(University of Modena and Reggio Emilia)*

EMIF: Towards a Scalable and Effective Indexing Framework for Large Scale Music Retrieval

Jialie Shen *(Singapore Management University)*

Tao Mei *(Microsoft Research Asia)*

Dacheng Tao *(University of Technology, Sydney)*

Xuelong Li *(Chinese Academy of Sciences)*

Yong Rui *(Microsoft Research Asia)*

Specific Person Retrieval via Incomplete Text Description

Mang Ye *(Wuhan University)*

Chao Liang *(Wuhan University)*

Zheng Wang *(Wuhan University)*

Qingming Leng *(Jiujiang University)*

Jun Chen *(Wuhan University)*

Jun Liu *(Wuhan University)*

Combining Generic and Specific Information for Cross-modal Retrieval

Thi Quynh Nhi Tran *(CEA-LIST/LVIC)*

Hervé Le Borgne *(CEA-LIST/LVIC)*

Michel Crucianu *(CEDRIC-CNAM)*

3D Sketch-Based 3D Model Retrieval

Bo Li *(Texas State University)*

Yijuan Lu *(Texas State University)*

Azeem Ghumman *(Texas State University)*

Bradley Strylowski *(Texas State University)*

Mario Gutierrez *(Texas State University)*

Safiyah Sadiq *(Texas State University)*

Scott Forster *(Texas State University)*

Natacha Feola *(Texas State University)*

Travis Bugerin *(Texas State University)*

Boosting Prediction of Geo-location for Web Images Through Integrating Multiple Knowledge Sources

Hao Kuang *(University of Ottawa)*

Shiai Zhu *(University of Ottawa)*

Abdulmotaleb El Saddik *(University of Ottawa)*

Expression Recognition from Visible Images with the Help of Thermal Images

Xiaoxiao Shi *(University of Science and Technology of China)*

Shangfei Wang *(University of Science and Technology of China)*

Yachen Zhu *(University of Science and Technology of China)*

Multi-facet Learning using Deep Convolutional Neural Network for Person-Related Categories in Photos

Liangliang Cao *(IBM Research)*

Zhicheng Yan *(University of Illinois at Urbana-Champaign)*

John R. Smith *(IBM Research)*

Sketch-based Image Retrieval via Shape Words

Changcheng Xiao *(Shanghai Jiao Tong University)*

Changhu Wang *(Microsoft Research)*

Liqing Zhang *(Shanghai Jiao Tong University)*

Lei Zhang *(Microsoft Corporation)*

Multiple Aesthetic Attribute Assessment by Exploiting Relations Among Aesthetic Attributes

Zhen Gao *(University of Science and Technology of China)*

Shangfei Wang *(University of Science and Technology of China)*

Qiang Ji *(Rensselaer Polytechnic Institute)*

Emotion Recognition from EEG Signals using Hierarchical Bayesian Network with Privileged Information

Zhen Gao *(University of Science and Technology of China)*

Shangfei Wang *(University of Science and Technology of China)*

Multi-Label Active Learning with Chi-Square Statistics for Image Classification

Chen Ye *(Soochow University)*

Jian Wu *(Soochow University)*

Victor S. Sheng *(University of Central Arkansas)*

Shiquan Zhao *(Soochow University)*

Pengpeng Zhao *(Soochow University)*

Zhiming Cui *(Soochow University)*

Multiple Measurements and Joint Dimensionality Reduction for Large Scale Image Search with Short Vectors

Filip Radenović *(CTU in Prague)*

Hervé Jégou *(INRIA, Rennes)*

Ondřej Chum *(CTU in Prague)*

Exploring EEG for Object Detection and Retrieval

Eva Mohedano *(Dublin City University)*

Kevin McGuinness *(Dublin City University)*

Graham Healy *(Dublin City University)*

Noel E. O'Connor *(Dublin City University)*

Alan F. Smeaton *(Dublin City University)*

Amaia Salvador *(Universitat Politècnica de Catalunya)*

Sergi Porta *(Universitat Politècnica de Catalunya)*

Xavier Giró-i-Nieto *(Universitat Politècnica de Catalunya)*

Kernel Local Descriptors with Implicit Rotation Matching

Andrei Bursuc *(Inria)*

Giorgos Tolias *(Inria)*

Hervé Jégou *(Inria)*

Semantic Concept Annotation for User Generated Videos Using Soundtracks

Qin Jin *(Renmin University of China)*

Junwei Liang *(Renmin University of China)*

Xixi He *(Renmin University of China)*

Gang Yang *(Renmin University of China)*

Jieping Xu *(Renmin University of China)*

Xirong Li *(Renmin University of China)*

Automatic Image Annotation using Deep Learning Representations

Venkatesh N. Murthy *(University of Massachusetts, Amherst)*

Subhransu Maji *(University of Massachusetts, Amherst)*

R. Manmatha *(University of Massachusetts, Amherst)*

My Day in Review: Visually Summarising Noisy Lifelog Data

Soumyadeb Chowdhury *(University of Glasgow)*

Philip J. McParlane *(University of Glasgow)*

Md. Sadek Ferdous *(University of Glasgow)*

Joemon Jose *(University of Glasgow)*

Audio-Based Multimedia Event Detection with DNNs and Sparse Sampling

Khalid Ashraf *(University of California, Berkeley)*

Benjamin Elizalde *(International Computer Science Institute)*

Forrest Iandola *(University of California, Berkeley)*

Matthew Moskewicz *(University of California, Berkeley)*

Julia Bernd *(International Computer Science Institute)*

Gerald Friedland *(International Computer Science Institute)*

Kurt Keutzer *(University of California, Berkeley)*

Learning Binary Codes for Hashing via Feature Decomposition

Xiao-Jiao Mao *(Nanjing University)*

Zhen-Fei Ju *(Nanjing University)*

Rui Xu *(Nanjing University)*

Yu-Bin Yang *(Nanjing University)*

Multimodal Learning with Deep Boltzmann Machine for Emotion Prediction in User Generated Videos

Lei Pang *(City University of Hong Kong)*

Chong-Wah Ngo *(City University of Hong Kong)*

Improving Automatic Name-Face Association using Celebrity Images on the Web

Zhineng Chen *(Chinese Academy of Sciences)*

Bailan Feng *(Chinese Academy of Sciences)*

Chong-Wah Ngo *(City University of Hong Kong)*

Caiyan Jia *(Beijing Jiaotong University)*

Xiangsheng Huang *(Chinese Academy of Sciences)*

Demonstrations

Session Chair: Benoit Huet

Music Positioning and Annotation for Television Videos

Gang Yang *(Renmin University of China)*

Jieping Xu *(Renmin University of China)*

Xirong Li *(Renmin University of China & Shanghai Key Laboratory of Intelligent Information Processing)*

KinectSBR: A Kinect-Assisted 3D Sketch-Based 3D Model Retrieval System

Bo Li *(Texas State University)*

Yijuan Lu *(Texas State University)*

Azeem Ghumman *(Texas State University)*

Bradley Strylowski *(Texas State University)*

Mario Gutierrez *(Texas State University)*

Safiyah Sadiq *(Texas State University)*

Scott Forster *(Texas State University)*

Natacha Feola *(Texas State University)*

Travis Bugerin *(Texas State University)*

An Improved System for Real-Time Scene Text Recognition

Haojin Yang *(University of Potsdam)*

Cheng Wang *(University of Potsdam)*

Xiaoyin Che *(University of Potsdam)*

Sheng Luo *(University of Potsdam)*

Christoph Meinel *(University of Potsdam)*

DigInPix: Visual Named-Entities Identification in Images and Videos

Pierre Letessier *(INA)*

Nicolas Hervé *(INA)*

Alexis Joly *(INRIA Zenith)*

Hakim Nabi *(INA)*

Mathieu Derval *(INA)*

Olivier Buisson *(INA)*

Mobile Media Thumbnailing

Yingying Chen *(Chinese Academy of Sciences)*

Jinqiao Wang *(Chinese Academy of Sciences)*

Jing Liu *(Chinese Academy of Sciences)*

Hanqing Lu *(Chinese Academy of Sciences)*

IdeaPanel: A Large Scale Interactive Sketch-based Image Search System

Changcheng Xiao *(Shanghai Jiao Tong University)*

Changhu Wang *(Microsoft Research)*

Liqing Zhang *(Shanghai Jiao Tong University)*

Lei Zhang *(Microsoft Corporation)*

A Sparse Ensemble Learning System for Efficient Semantic Indexing

Sheng Tang *(Chinese Academy of Sciences)*

Hui Chen *(Chinese Academy of Sciences)*

Yu Li *(Chinese Academy of Sciences)*

Jun-Bin Xiao *(Chinese Academy of Sciences)*

Jin-Tao Li *(Chinese Academy of Sciences)*

A Multi-Sensory Gesture-Based Occupational Therapy Environment for Controlling Home Appliances

Ahmad M. Qamar *(Umm Al-Qura University & Universiti Sains Malaysia)*

Ahmed Riaz Khan *(Umm Al-Qura University)*

Syed Osama Husain *(Umm Al-Qura University)*

Md. Sadek Abdur Rahman *(Umm Al-Qura University)*

Saleh Baslamah *(Umm Al-Qura University)*

Incremental Multimodal Query Construction for Video Search

Shicheng Xu *(Carnegie Mellon University)*

Huan Li *(Carnegie Mellon University)*

Xiaojun Chang *(The University of Queensland)*

Shoou-I Yu *(Carnegie Mellon University)*

Xingzhong Du *(The University of Queensland)*

Xuanchong Li *(Carnegie Mellon University)*

Lu Jiang *(Carnegie Mellon University)*

Zexi Mao *(Carnegie Mellon University)*

Zhenzhong Lan *(Carnegie Mellon University)*

Susanne Burger *(Carnegie Mellon University)*

Alexander Hauptmann *(Carnegie Mellon University)*

Wednesday, 19:00 - **Location: Pearl Room (7F)**

Reception

June 25, Thursday

Thursday, 09:00 – 10:00 **Location: Yangtze Hall (5F)**

Keynote Speech 2

Session Chair: Alex Hauptmann

Thursday, 10:00 – 10:20 **Location: Yangtze Hall (5F)**

Coffee Break

Thursday, 10:20 – 12:00 **Location: Yangtze Hall (5F)**

Oral Session 4: Analytical Methods for Multimedia Retrieval

Session Chair: Michele Merler

Semi-Supervised Image Classification by Nonnegative Sparse Neighborhood Propagation

Zhao Zhang *(Soochow University)*

Li Zhang *(Soochow University)*

Mingbo Zhao *(City University of Hong Kong)*

Weiming Jiang *(Soochow University)*

Yuchen Liang *(Soochow University)*

Fanzhang Li *(Soochow University)*

Hierarchical Encoding of Binary Descriptors for Image Matching

Zhendong Mao *(Chinese Academy of Sciences)*

Lingling Tong *(National Computer Network Emergency Response Technical Team)*

Hongtao Xie *(Chinese Academy of Sciences)*

Qi Tian *(University of Texas at San Antonio)*

Kernelizing Spatially Consistent Visual Matches for Fine-Grained Classification

Valentin Leveau *(INA & INRIA Zenith)*

Alexis Joly *(INRIA Zenith)*

Olivier Buisson *(INA)*

Patrick Valduriez *(INRIA Zenith)*

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High-Dimensional Indexing by Sparse Approximation

Pedro Borges *(Universidade Nova Lisboa)*

André Mourão *(Universidade Nova Lisboa)*

João Magalhães *(Universidade Nova Lisboa)*

Diffusion-on-Manifold Aggregation of Local Features for Shape-based 3D Model Retrieval

Takahiko Furuya *(University of Yamanashi)*

Ryutarou Ohbuchi *(University of Yamanashi)*

Thursday, 12:00 – 13:40 **Location: Riverside Hall (1F)**

Lunch

Thursday, 13:40 – 15:00 **Location: Yangtze Hall (5F)**

Best Paper Session

Session Chair: Cees Snoek

Image Classification and Retrieval are ONE

Lingxi Xie *(Tsinghua University)*

Richang Hong *(Hefei University of Technology)*

Bo Zhang *(Tsinghua University)*

Qi Tian *(University of Texas at San Antonio)*

Social Event Mining in Large Photo Collections

Maia Zaharieva *(University of Vienna & Vienna University of Technology)*

Matthias Zeppelzauer *(St. Pölten University of Applied Sciences)*

Manfred Del Fabro *(Klagenfurt University)*

Daniel Schopfhauser *(University of Vienna)*

Unified YouTube Video Recommendation via Cross-network Collaboration

Ming Yan *(Chinese Academy of Sciences & China-Singapore Institute of Digital Media)*

Jitao Sang *(Chinese Academy of Sciences & China-Singapore Institute of Digital Media)*

Changsheng Xu *(Chinese Academy of Sciences & China-Singapore Institute of Digital Media)*

Bridging the Ultimate Semantic Gap: A Semantic Search Engine for Internet Videos

Lu Jiang *(Carnegie Mellon University)*

Shoou-I Yu *(Carnegie Mellon University)*

Deyu Meng *(Xi'an Jiaotong University)*

Teruko Mitamura *(Carnegie Mellon University)*

Alexander G. Hauptmann *(Carnegie Mellon University)*

Thursday, 15:00 – 15:20 **Location: Yangtze Hall (5F)**

Coffee Break

Thursday, 15:20 – 16:20 **Location: Yangtze Hall (5F)**

Panel Discussion

Facilitator: Alex Hauptmann

Thursday, 16:20 – 17:40 **Location: Yangtze Hall (5F)**

Special Oral Session

Session Chair: Luming Zhang

Attribute Guided Dictionary Learning

Wei Wang *(University of Trento)*

Yan Yan *(University of Trento)*

Nicu Sebe *(University of Trento)*

Online Multimodal Co-indexing and Retrieval of Weakly Labeled Web Image Collections

Lei Meng *(Nanyang Technological University)*

Ah-Hwee Tan *(Nanyang Technological University)*

Cyril Leung *(Nanyang Technological University & The University of British Columbia)*

Liqiang Nie *(National University of Singapore)*

Tat-Seng Chua *(National University of Singapore)*

Chunyan Miao *(Nanyang Technological University)*

Weakly Supervised Random Forest for Multi-Label Image Clustering and Segmentation

Yingjie Xia *(Zhejiang University)*

Qianqian Zhu *(Hangzhou Normal University)*

Wei Wei *(Singapore Management University)*

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Harvesting Multiple Sources for User Profile Learning: A Big Data Study

Aleksandr Farseev *(National University of Singapore)*

Liqiang Nie *(National University of Singapore)*

Mohammad Akbari *(National University of Singapore)*

Tat-Seng Chua *(National University of Singapore)*

Thursday, 18:20 - **Location: Shanghai Min Restaurant (7F)**

Banquet

June 26, Friday

Friday, 09:00 – 10:00 **Location: Yangtze Hall (5F)**

Keynote Speech 3

Session Chair: Yu-Gang Jiang

Friday, 10:00 – 10:20 **Location: Yangtze Hall (5F)**

Coffee Break

Friday, 10:20 – 11:20 **Location: Yangtze Hall (5F)**

Keynote Speech 4

Session Chair: Yiannis Kompatsiaris

Friday, 11:20 – 12:20 **Location: Yangtze Hall (5F)**

Invited Industry Talks

Session Chair: Jialie Shen

Friday, 12:20 – 13:40 **Location: Riverside Hall (1F)**

Lunch

Friday, 13:40 – 15:00 **Location: Yangtze Hall (5F)**

Oral Session 5: Photo Applications

Session Chair: Benoit Huet

Bundling Centre for Landmark Image Discovery

Qian Zhang *(University of Nottingham)*

Guoping Qiu *(University of Nottingham (UK & China))*

To Keep or Not to Keep: An Expectation-oriented Photo Selection Method for Personal Photo Collections

Andrea Ceroni *(Leibniz Universität Hannover)*

Vassilios Solachidis *(CERTH)*

Claudia Niederée *(Leibniz Universität Hannover)*

Olga Papadopoulou *(CERTH)*

Nattiya Kanhabua *(Leibniz Universität Hannover)*

Vasileios Mezaris *(CERTH)*

Latent Factors of Visual Popularity Prediction

Spencer Cappallo *(University of Amsterdam)*

Thomas Mensink *(University of Amsterdam)*

Cees G. M. Snoek *(University of Amsterdam & Qualcomm Research Netherlands)*

Visual Event Summarization on Social Media using Topic Modelling and Graph-based Ranking Algorithms

Manos Schinas *(CERTH)*

Symeon Papadopoulos *(CERTH)*

Yiannis Kompatsiaris *(CERTH)*

Pericles A. Mitkas *(Aristotle University of Thessaloniki)*

Friday, 15:00 – 15:20 **Location: Yangtze Hall (5F)**

Coffee Break

Friday, 15:20 – 18:20 **Location: Outside of Yangtze Hall (5F)**

Full Paper Posters & Special Poster Session

Session Chair: Nicu Sebe

Full Paper Posters:

A Privacy-Preserving Bipartite Graph Matching Framework for Multimedia Analysis and Retrieval

Wei-Ta Chu *(National Chung Cheng University)*

Feng-Chi Chang *(National Chung Cheng University)*

Describing Images with Hierarchical Concepts and Object Class Localization

Yahong Han *(Tianjin University)*

Guang Li *(Tianjin University)*

Supervised Multi-scale Locality Sensitive Hashing

Li Weng *(Inria Rennes - Bretagne Atlantique)*

I-Hong Jhuo *(Academia Sinica)*

Miaojing Shi *(Peking University)*

Meng Sun *(PLA University of Science and Technology)*

Wen-Huang Cheng *(Academia Sinica)*

Laurent Amsaleg *(CNRS Rennes)*

A Novel Visual-Region-Descriptor-based Approach to Sketch-based Image Retrieval

Cheng Jin *(Fudan University)*

Zheming Wang *(Fudan University)*

Tianhao Zhang *(Fudan University)*

Qinen Zhu *(Fudan University)*

Yuejie Zhang *(Fudan University)*

Location Prediction of Social Images via Generative Model

Xiaoming Zhang *(Beihang University)*

Zhoujun Li *(Beihang University)*

Senzhang Wang *(Beihang University)*

Yang Yang *(Beihang University)*

Xueqiang Lv *(Beijing Key Laboratory of Internet Culture and Digital Dissemination Research)*

Scalable Multimodal Search with Distributed Indexing by Sparse Hashing

André Mourão *(Universidade Nova de Lisboa)*

João Magalhães *(Universidade Nova de Lisboa)*

Insight in Image Collections by Multimedia Pivot Tables

Marcel Worring *(University of Amsterdam)*

Dennis Koelma *(University of Amsterdam)*

Distribution Regularized Nonnegative Matrix Factorization for Transfer Visual Feature Learning

Yuchen Guo *(Tsinghua University)*

Guiguang Ding *(Tsinghua University)*

Qiang Liu *(Tsinghua University)*

Heterogeneous Semantic Level Features Fusion for Action Recognition

Junjie Cai *(University of Texas at San Antonio)*

Michele Merler *(IBM T.J. Watson Research Center)*

Sharath Pankanti *(IBM T.J. Watson Research Center)*

Qi Tian *(University of Texas at San Antonio)*

Social Friend Recommendation Based on Network Correlation and Feature Co-Clustering

Shangrong Huang *(University of Technology Sydney)*

Jian Zhang *(University of Technology Sydney)*

Shiyang Lu *(CSIRO)*

Xian-Sheng Hua *(Microsoft Research Redmond)*

Improving Diversity in Image Search via Supervised Relevance Scoring

Eleftherios Spyromitros-Xioufis *(CERTH-ITI)*

Symeon Papadopoulos *(CERTH-ITI)*

Alexandru Lucian Ginsca *(CEA)*

Adrian Popescu *(CEA)*

Yiannis Kompatsiaris *(CERTH-ITI)*

Ioannis Vlahavas *(AUTH)*

Unsupervised Distance Learning by Rank Correlation Measures for Image Retrieval

César Yugo Okada *(Universidade Estadual Paulista)*

Daniel Carlos Guimarães Pedronette *(Universidade Estadual Paulista)*

Ricardo da S. Torres *(University of Campinas)*

Exploring Pooling Strategies based on Idiosyncrasies of Spatio-Temporal Interest Points

Yuancheng Ye *(The Graduate Center, City University of New York)*

Xiaodong Yang *(The City College, City University of New York)*

Yingli Tian *(The City College, City University of New York)*

Image-Text Cross-Modal Retrieval via Modality-Specific Feature Learning

Jian Wang *(Chinese Academy of Sciences)*

Yonghao He *(Chinese Academy of Sciences)*

Cuicui Kang *(Chinese Academy of Sciences)*

Shiming Xiang *(Chinese Academy of Sciences)*

Chunhong Pan *(Chinese Academy of Sciences)*

Location-Based Parallel Tag Completion for Geo-tagged Social Image Retrieval

Jiaming Zhang *(Chinese Academy of Sciences)*

Shuhui Wang *(Chinese Academy of Sciences)*

Qingming Huang *(Chinese Academy of Sciences & University of Chinese Academy of Sciences)*

Exploiting Spatial Relationship between Scenes for Hierarchical Video Geotagging

Yifang Yin *(National University of Singapore)*

Luming Zhang *(National University of Singapore)*

Roger Zimmermann *(National University of Singapore)*

Using Viewer's Facial Expression and Heart Rate for Sports Video Highlights Detection

Prithwi Raj Chakraborty *(Queensland University of Technology)*

Ligang Zhang *(Xi'an University of Technology)*

Dian Tjondronegoro *(Queensland University of Technology)*

Vinod Chandran *(Queensland University of Technology)*

A Deep Neural Network for Modeling Music

Pengjing Zhang *(Fudan University)*

Xiaoqing Zheng *(Fudan University)*

Wenqiang Zhang *(Fudan University)*

Siyan Li *(Fudan University)*

Sheng Qian *(Fudan University)*

Wenqi He *(Fudan University)*

Shangtong Zhang *(Fudan University)*

Ziyuan Wang *(Fudan University)*

Robust Seed Localization and Growing with Deep Convolutional Features for Scene Text Detection

Hailiang Xu *(Nanjing University)*

Feng Su *(Nanjing University)*

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Swap Retrieval: Retrieving Images of Cats When the Query Shows a Dog

Amir Ghodrati *(KU Leuven)*

Xu Jia *(KU Leuven)*

Marco Pedersoli *(KU Leuven)*

Tinne Tuytelaars *(KU Leuven)*

Graph Learning on K Nearest Neighbours for Automatic Image Annotation

Feng Su *(Nanjing University)*

Like Xue *(Nanjing University)*

Scalable Organization of Collections of Motion Capture Data via Quantitative and Qualitative Analysis

Songle Chen *(Nanjing University)*

Zhengxing Sun *(Nanjing University)*

Yan Zhang *(Nanjing University)*

Content-Based Video Search over 1 Million Videos with 1 Core in 1 Second

Shoou-I Yu *(Carnegie Mellon University)*

Lu Jiang *(Carnegie Mellon University)*

Zhongwen Xu *(University of Technology, Sydney)*

Yi Yang *(University of Technology, Sydney)*

Alexander G. Hauptmann *(Carnegie Mellon University)*

Bag-of-Fragments: Selecting and Encoding Video Fragments for Event Detection and Re-counting

Pascal Mettes *(University of Amsterdam)*

Jan C. van Gemert *(University of Amsterdam)*

Spencer Cappallo *(University of Amsterdam)*

Thomas Mensink *(University of Amsterdam)*

Cees G. M. Snoek *(University of Amsterdam & Qualcomm Research)*

Evaluating Two-Stream CNN for Video Classification

Hao Ye *(Fudan University)*

Zuxuan Wu *(Fudan University)*

Rui-Wei Zhao *(Fudan University)*

Xi Wang *(Fudan University)*

Yu-Gang Jiang *(Fudan University)*

Xiangyang Xue *(Fudan University)*

Special Poster Session: Person Search and Verification from Rich Media Data:

End-to-End Photo-Sketch Generation via Fully Convolutional Representation Learning

Liliang Zhang *(Sun Yat-sen University)*

Liang Lin *(Sun Yat-sen University)*

Xian Wu *(Sun Yat-sen University)*

Shengyong Ding *(Sun Yat-sen University)*

Lei Zhang *(The Hong Kong Polytechnic University)*

Teaching Video Analytics Based on Student Spatial and Temporal Behavior Mining

Jinxian Qin *(Fudan University)*

Yaqian Zhou *(Fudan University)*

Hong Lu *(Fudan University)*

Heqing Ya *(Fudan University)*

Multi-view Face Detection Using Deep Convolutional Neural Networks

Sachin Sudhakar Farfade *(Yahoo! Inc.)*

Mohammad Saberian *(Yahoo! Inc.)*

Li-Jia Li *(Yahoo! Inc.)*

Friday, 18:20 – 18:40 **Location: Yangtze Hall (5F)**

Conference Close

Session Chair: Alex Hauptmann

Tutorials

Tutorial 1: Social Multimedia Computing

Meeting Room 5J, 09:00 – 17:40, June 23 Tuesday

Tutorial Description

The multimedia data generated and consumed under social media circumstances is referred to as social multimedia. Three elements are identified, i.e., multimedia content, user, and interactions (between both user-user and user-content). Impacted by the participatory nature of WEB 2.0, users actively participate in the generation as well as consumption processes. As the hybrid of multimedia and social media, social multimedia enjoys advantages of both direct rich sensory simulation and efficient information access and propagation, thus having great potentials in analysis and utilization.

The emergence of social multimedia has brought challenges as well as opportunities to computing. On one hand, most social multimedia services are user-oriented, making it important to understand user demands from their interactions with the multimedia content. On the other hand, while multimedia content analysis still remains open, the participatory property of social multimedia offers a new solution perspective. Social multimedia computing, a multidisciplinary research and application field, has been developed to understand social multimedia content and connect the social multimedia content with users by exploiting the various social interactions. The potential applications range from information service, communication, entertainment, to healthcare, security, etc.

Thanks to the wide prevalence of social multimedia data and the increasing demands for social multimedia services, there has been a growing number of research on social multimedia computing, evidenced by the volume of papers produced, and many related tracks and special issues in prestigious multimedia conferences and journals. In this tutorial, we will review related work in recent social multimedia computing from two perspectives, i.e. social-sensed multimedia computing, and user-centric social multimedia computing.

Biographies of Organizers

Peng Cui is now an Assistant Professor in Tsinghua University, China. He received his PhD degree from Tsinghua University in 2010. He is an active researcher dedicated to novel algorithms and systems in social multimedia computing, and he is keen to promote the convergence of social media data mining and multimedia computing technologies. Dr. Cui has strong backgrounds in both data mining and multimedia communities. He has published more than 30 papers in prestigious conferences and journals in data mining and multimedia, including ACM MM, SIGKDD, SIGIR, AAAI, IEEE TMM, IEEE TKDE, IEEE TIP etc. His recent research won the ACM MM12 Grand Challenge Multimodal Award, and MMM13 Best Paper Award. He is the Area Chair of ACM MM 2014, ICASSP 2013, Associate Editor of Frontier of Computer Science journal, Guest Editor of Information Retrieval journal, and co-organized several special sessions and workshops on social multimedia in ICMR, ICME, ACM MM and WSDM.

Wenwu Zhu is with Computer Science Department of Tsinghua University as Professor of "1000 People Plan" of China. Prior to his current post, he was a Senior Researcher and Research Manager at Microsoft Research Asia. He was the Chief Scientist and the Director at Intel Research China from 2004 to 2008. He worked at Bell Labs New Jersey as Member of Technical Staff during 1996-1999. Wenwu Zhu is an IEEE Fellow, SPIE Fellow and ACM Distinguished Scientist. He has published over 200 referred papers in the areas of multimedia computing, communications and networking. He is inventor or co-inventor of over 40 patents. His current research interests are in the area of multimedia cloud computing, social media computing, multimedia big data, and multimedia communications and networking. He served(s) on various editorial boards, such as Guest Editor for the Proceedings of the IEEE, IEEE T-CSVT, and IEEE JSAC; Associate Editor for IEEE Transactions on Mobile Computing, IEEE Transactions on Multimedia, and IEEE Transactions on Circuits and Systems for Video Technology; Leading Editor of the Area "Computer Networks and Distributed Computing" of Journal of Computer Science and Technology. He received the Best Paper Award in ACM Multimedia 2012, the Best Paper Award in IEEE Transactions on Circuits and Systems for Video Technology in 2001, and the other 3 international Best Paper Awards. He was the Chair of Visual Signal Processing and Communication Technical Committee of IEEE Circuits and Systems Society (2006-2008), and

served in the Steering Committee of IEEE Transactions on Mobile Computing (2007-2010). He currently serves as the Chair of Beijing Chapter at IEEE Circuits and Systems Society and advisory board of International Journal of Handheld Computing Research. He served as TPC Co-Chair of IEEE ISCAS 2013 and serves as TPC Co-Chair for ACM Multimedia 2014.

Jitao Sang is assistant professor in National Laboratory of Pattern Recognition at Chinese Academy of Sciences (CAS). He graduated with the highest honor for CAS PhD students, the special prize of CAS president scholarship. His research interest is in social multimedia computing, where the recent research in user-centric social multimedia computing has attracted increasing attentions, with award-winning publications in the prestigious conferences (best paper finalist in MM2012 and MM2013, best student paper in MMM2013). So far, he has authored one book, filed three patents, co-authored more than 40 peer-referenced papers in multimedia-related journals and conferences. He is program co-chair in PCM 2015, ICIMCS 2015, publicity chair in MMM 2015, publication chair in ICIMCS 2013, 2014, special session organizer in ICME2015, MMM2013, ICIMCS 2013, and program committee member in many conferences (MM2013, MM2014, CIKM2014, etc.). He is guest editor in many journals such as MMSJ and MTA. He is keynote speaker at Social Media 2013, and tutorial speaker at MM 2014, MMM 2015, ICMR 2015 and ICME 2015.

Tutorial 2: Multimedia Quality Modeling: Theories and Applications

Meeting Room 5I, 14:20 – 17:40, June 23 Tuesday

Tutorial Description

Recently we have witnessed an explosive growth of image/video/audio data in both the local centers and social-networking websites, such as Flickr, YouTube, and Facebook. Artificial intelligence techniques have proven useful for interpreting this preponderance of data. In the last decades, many quality models have been proposed. Computational quality models evaluate multimedia contents either objectively or subjectively, based on which large-scale multimedia content can be managed efficiently. They are useful tools in various applications such as multimedia retrieval, recommendation systems, graphical design, and etc. Building a successful quality model depends on a wide range of domain knowledge, such as multimedia, computer vision, machine learning, and even cognitive science. Extensive research efforts have been dedicated to design multimedia quality models. While effective methods to manipulate this task are still at their infancy. In detail, some key technical challenges are: 1) the deemphasized role of semantic content that are many times more important than low-level visual features in media quality prediction; 2) the necessity to incorporate human perception of multimedia contents (e.g., biologically-inspired visual/acoustic features) for quality assessment; 3) the difficulty to optimally fuse low-level and high- level visual features into a quality model; and 4) the lack of publicly available data sets to fairly evaluate the performance of a specific quality model. This tutorial targets the recent technical theory and applications on computational models, such as photo/video quality-based retargeting and feature selection for multimedia retrieval. A brief outline of our tutorial can be described as follows:

- Computational models for image/video quality evaluation (by Luming Zhang);
- Applications closely related to computational quality models, such as image cropping/retargeting, video summarization, and feature selection for efficient multimedia retrieval (by Luming Zhang);

- Discovering biologically/psychologically-inspired visual features for computational quality models (by Luming Zhang);
- Novel feature selection algorithms for multimedia analysis (by Yi Yang);
- State-of-the-art feature engineering techniques for multimedia event detection (by Yi Yang);

Biographies of Organizers

Luming Zhang received his Ph.D. degree in computer science from Zhejiang University, China. Currently he is a Postdoc Senior Research Fellow at the School of Computing, National University of Singapore. His research interests mainly include multimedia analysis, image enhancement, and pattern recognition. He has authored and co- authored more than 40 scientific articles at top venues including IEEE T-IP, T-MM, T-CYB, CVPR, and ACM MM. He served/is serving as the Guest editor for nine international journals. He served as the PC members of international conferences such as ACM Multimedia, ICME, and ICMR. He is the associate editor of Neurocomputing and KSII Transactions on Internet and Information Systems.

Yi Yang is a Senior lecturer of Computer Science with the Centre for Quantum Computation & Intelligent Systems, University of Technology, Sydney. Prior to that, he was a postdoc research fellow with the school of computer science, Carnegie Mellon University. He received the PhD degree in Computer Science from Zhejiang University in 2010. His research interest includes machine learning and its application to computer vision and multimedia analysis.

Co-located Workshop

EMR 2015: The 2nd International Workshop on Environmental Multimedia Retrieval 2015

Organizers

Stefanos Vrochidis (Information Technologies Institute/CERTH, Greece)

Kostas Karatzas (Aristotle University of Thessaloniki, Greece)

Ari Karppinen (Finnish Meteorological Institute, Finland)

Alexis Joly (INRIA, France)

Alexandra Branzan Albu (Un. of Victoria, Canada)

Description

The rapid advancements of digital technologies, as well as the availability of digital cameras and sensors have resulted in a great increase of multimedia data production worldwide. This is also the case for multimedia data that describe the state of the environment, which include huge amounts of data streams from models, stations, amateur sensors and cameras, as well as visual environmental information (e.g. heatmaps, forest satellite and underwater images). In parallel, the success of citizen sciences and social networking tools has fostered the emergence of large communities of nature observers (e.g. e-bird, Tela Botanica, Digital Fishers , etc.), who produce large collections of biodiversity multimedia records. Citizens have become increasingly aware of the important role that environmental data (e.g. weather forecast, life species distributions) play on health issues (e.g. allergies) and to a variety of other human activities (e.g. agriculture). In addition, such data are very critical for important environmental phenomena (e.g. greenhouse effect, the climate change, etc).

Therefore, there is an increasing need for the research and development of advanced techniques for analysing and interpreting environmental data provided in multimedia formats. This will allow for the development of personalised applications that will take into account the

state of the environment and the human health conditions. In addition, the production of accurate and timely knowledge of other living species, which is essential for a sustainable development of humanity and for biodiversity conservation, will be facilitated. Automated event retrieval and video summarization techniques will also be very useful for advancing the state of the art in biology and marine environment research.

Time and Place

9:00-13:00, June 23 Tuesday

Meeting Room 5I, Shanghai International Convention Center

Program

9:00-9:20 **Welcome and opening remarks**

9:20-10:20 **Keynote Talk**

Guoping Qiu, "*Grass, Scrub, Tree, Random Forest and Human in the Loop-Automatic habitat classification based on digital photographs*"

10:20-11:00 **Oral Session I: Life species identification and classification**

Chair: Stefanos Vrochidis

Thi-Lan Le, Duong Nam Duong, Van-Toi Nguyen, Hai Vu, Van Nam Hoang and Thanh-Nhan Nguyen, *"Complex background leaf-based plant identification method based on interactive segmentation and kernel descriptor"*

Chen Li, Kimiaki Shirahama and Marcin Grzegorzek, *"Environmental Microorganism Classification Using Sparse Coding and Weakly Supervised Learning"*

11:00-11:20 **Coffee break**

11:20-12:00 **Oral Session II: Behaviour analysis of fish and amphibians in aquatic environments**

Chair: Stefanos Vrochidis

Jie Xie, Michael Towsey, Jinglan Zhang and Paul Roe, *"Image processing and classification procedure for the analysis of Australian frog vocalisations"*

Nancy Xin Ru Wang, Alexandra Branzan Albu and Sarika Cullis-Suzuki, *"Automated Analysis of Wild Fish Behavior in a Natural Habitat"*

12:00-12:40 **Oral Session III: Discovery, analysis and fusion of environmental data**

Chair: Ari Karppinen

Theodora Tsikrika, Antonis Latas, Anastasia Moumtzidou, Elisavet Chatzilari, Stefanos Vrochidis and Yiannis Kompatsiaris, *"Discovery of Environmental Web Resources Based on the Combination of Multimedia Evidence"*

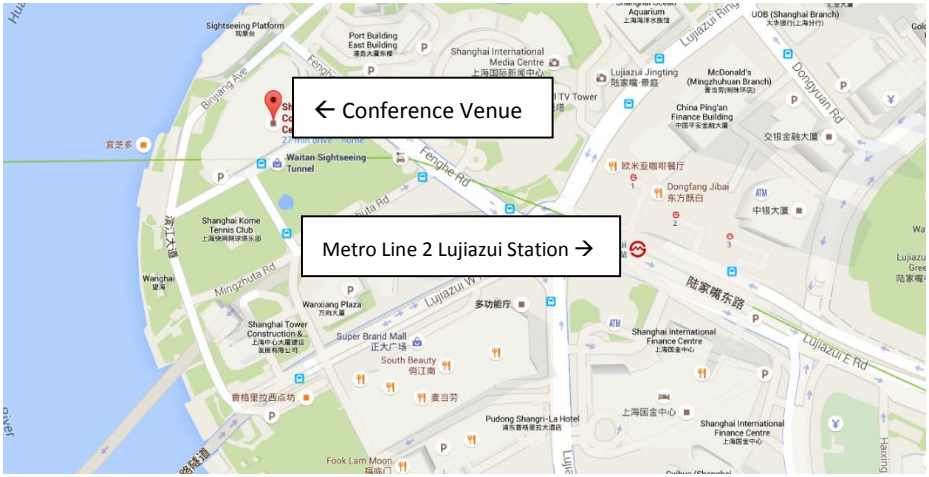
Lasse Johansson, Ari Karppinen and Katja Loven, *"Evaluation of ground level air quality using dynamic land-use regression and fusion of environmental information"*

12:40-13:00 **Closing remarks**

Conference Venue

Shanghai International Convention Center, 2727 Binjiang Ave, Pudong, Shanghai.

(上海国际会议中心，中国上海浦东滨江大道 2727 号)

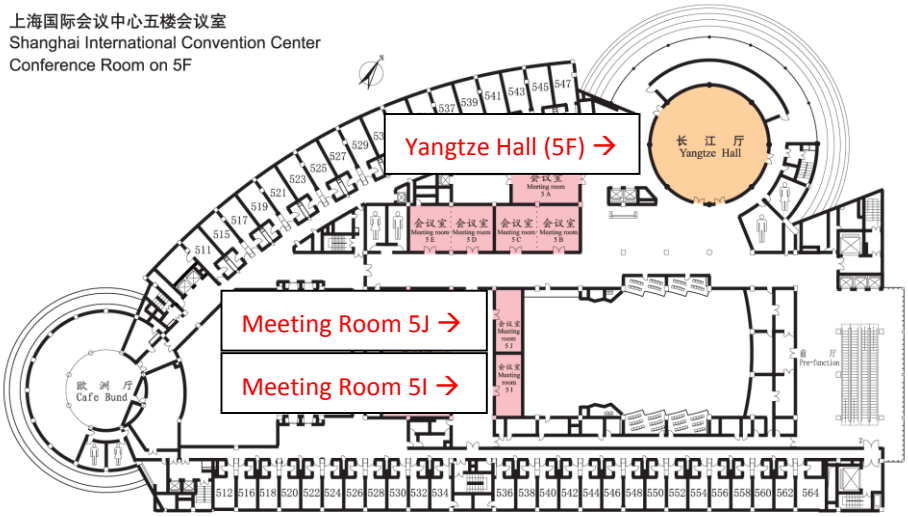


Connecting to the Wi-Fi:

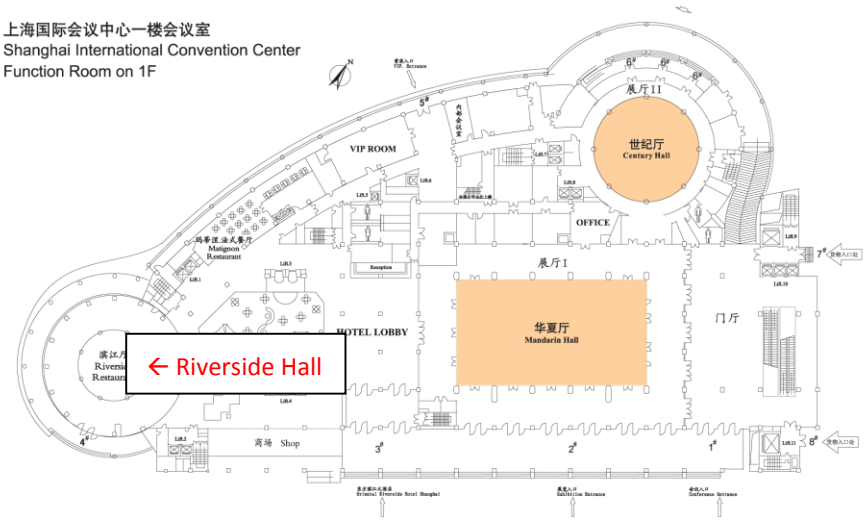
Free wireless connection is available in the conference area. You can connect “SHICC Conference” directly, no password is needed.

Conference Site Map

5th Floor, Yangtze Hall (main conference room) and rooms 5I & 5J (tutorials &workshop).



1st Floor, Lunch (Riverside Hall)



7th Floor, Reception (Pearl Room) and Banquet (Shanghai Min)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