

IAPR
www.iapr.org



Newsletter

Volume 38, Number 4
October 2016



Subscribe

IN THIS Issue

From the Editor's Desk

[CALLS for PAPERS](#)

[Calls from the IAPR
Nominating, Education,
Executive and Conferences &
Meetings Committees](#)

[Getting to Know...
Mohan Trivedi, IAPR Fellow](#)

[IAPR...The Next Generation:
Lu Bai](#)

[From the ExCo](#)

[IAPR Technical Committee \(TC\)
News](#)

[Meeting Reports:
DAS 2016, Biometrics 2016,
MCPR 2016, and ICVSS 2016](#)

[See you in Cancun!
ICPR2016 Registration is Open](#)

[Free Book Offers](#)

[Bulletin Board](#)

[Meeting and Education Planner](#)



From the Editor's Desk:

Checking out what other people are eating

by Arjan Kuijper

arjan.kuijper@igd.fraunhofer.de

<http://www.gris.tu-darmstadt.de/~akuijper/>

When I started my PhD studies, I was quite proud of the excellent fit between the theme and my background. No one else would fit in this profile. I was the best person for this job. The problem was so specialized that I was the only one who could solve it. Well – with some grains of salt, but still... As a consequence, it was very clear which colleagues did interesting related work, and which conference was the best choice to submit results to. Actually, this group of colleagues was rather small, and the set of relevant conferences reduced to one – with some “B” choices. Actually, the bigger ones like ICPR, CVPR, ICCV and ECCV fell in that category. They were simply too broad, with many sessions dedicated to topics on which I had no clue.

After some time, I realized that my view was a bit too narrow. If I am the only one who cares about my results, then something is wrong. I decided that it was time to broaden my view. My research

now has a broader perspective, and consequently I find more people who do interesting things. And their results may be relevant to my work! Since that time I have started to enjoy the bigger conferences and started to read papers that were dedicated to topics a bit further away from my PhD topic. A specific eye-opener was a colleague coming to my poster saying: “I don’t understand anything of what you do, but the images look like the ones from the problem I’m currently dealing with”. That was the start of a so-called ‘inter-disciplinary’ collaboration.

I don’t know if you recognize this process. What I see around me, is that doing a PhD requires so much time in reading the most relevant material, setting up experiments, writing papers, and so on, that most people do not have time – and energy – to see what others are doing. The German language (which I am still trying to learn) has a nice phrase for this: “To look beyond the edge of your own dinner plate”.

CALLS for PAPERS

For the most up-to-date information on IAPR-supported conferences, workshops and summer schools, please visit the IAPR web site: www.iapr.org/conferences/

[ASAR 2017](#)

First International Workshop on
Arabic Script Analysis and Recognition
Nancy, France
Deadline: Dec. 1, 2016
Dates: Apr. 3-5, 2017

[MVA 2017](#)

15th IAPR Intl. Conf. on Machine Vision Applications
Nagoya, Japan
Deadline: Dec. 5, 2016
Dates: May 8-12, 2017

[PSIVT 2017](#)

8th Pacific Rim Symposium on
Image Analysis and Video Technology
Wuhan, China
Deadline: TBA
Dates: Nov. 20-24, 2017

[ICPRAM 2017](#)

6th International Conference on
Pattern Recognition Applications and Methods
Porto, Portugal
Deadline: Dec. 13, 2016
Dates: Feb. 24-26, 2017

[GbR 2017](#)

11th IAPR-TC15 Workshop on
Graph-based Representations
Anacapri, Italy
Deadline: January 8, 2017
Dates: May 16-18, 2017

[SCIA 2017](#)

20th Scandinavian Conference on Image Analysis
Tromsø, Norway
Deadline: Jan. 9, 2017
Dates: Jun. 12-14 2017

[ICDAR 2017](#)

14th International Conference on
Document Analysis and Recognition
Kyoto, Japan
Deadline: Mar. 15, 2017
Dates: Nov. 10-15, 2017

Nowadays, this is easier with all the digital information available – if you keep your eyes and mind open for it. The problem is namely that we are used to focusing only on our own dinner plate. Many conferences outside our scope may have relevant sessions, and if we don't attend those conferences (or a specific session) we may miss interesting papers that are presented there.

Two examples: Of course I am aware of the big Vision/Pattern Recognition conferences. I can't visit them all. And, although I want at least to browse the tables of

contents, I mostly forget to for various reasons. But this year, on LinkedIn, I saw a posting of a review of CVPR (ah – true, I wanted to browse the). The review was in [Computer Vision News](#). Actually, I couldn't have known it, since RSIP Vision (a company) started this newsletter in April. On their website they mention three reasons:

- "first, because there is no computer vision magazine available today, even though we are working in one of the fastest growing and most promising business fields in the high-tech

arena;

- "second, because as a commercial and technology leader it is our duty and honor to give back to our industry;
- "third, because the algorithm developers community deserves a tool filling the empty space between scientific papers summarizing academy research and hardware-related commercial journals."

Before you start with, "Hey, that's a company – no advertisement!", I'd say, "Take a look in the available magazines." I found them quite

Calls from IAPR Committees

From the IAPR Nominating Committee:

Call for Nominations for the IAPR Executive Committee

At its next meeting at ICPR 2016 in Cancun, the IAPR Governing Board will elect new IAPR Officers. The IAPR Nominating Committee seeks your help in finding candidates suitable for the jobs of President, First Vice President, Second Vice President, Secretary and Treasurer. Please contact Nominating Committee Chair Kim Boyer kboyer3@albany.edu for information on the procedure.”

From the IAPR Executive Committee (ExCo):

Call for Proposals for Summer Schools

Deadline: February 1, 2017
(for schools planned for April - July 2017)

Summer schools are training activities where participants are exposed to the latest trends and techniques in the particular pattern recognition field. They provide a unique opportunity to engage students and junior researchers with senior scientists in a fruitful way .

To be eligible for a grant, the organizers must work through at least one of the IAPR's technical committees as they develop and present the proposal.

Of course, the term “Summer School” is somewhat generic and traditional. There is no requirement that a school be offered during the summer.

How to Submit: Proposals for IAPR funded summer schools should be submitted to IAPR Second Vice President Simone Marinai by email (simone.marinai@unifi.it). A PDF attachment containing all the required information is appreciated.

For detailed guidelines on the proposal, see the [ExCo Initiative on Summer Schools](#).

From the IAPR Education Committee:

Call for Applications IAPR Research Scholarships

<http://www.iapr.org/docs/IAPR-EC-RS-Call-2016.pdf>

Description: IAPR Research Scholarships, awarded by the IAPR through its Education Committee (IAPR-EC), seek to make possible mobility across institutions and international boundaries for Early Career Researchers working in fields within the scope of the IAPR's interests. Through this program, the IAPR sees an opportunity to make a significant contribution to the development of Early Career Researchers as well as the wider Pattern Recognition community.

Covered expenses, funding and duration:

- The scholarship will cover round trip travel and basic living expenses
- The visits will be no longer than 12 months in duration.

Requirements:

- The candidate must be a full-time researcher (PhD research student who has completed at least one year's study at this level or someone already employed as a full-time researcher who has been active in the field for fewer than eight years and is working at a level equivalent to a post-doctoral researcher.
- The candidate must be member of an IAPR member society.
- The covered travel and housing expenses cannot be funded by another scholarship. If there is a shortfall between the actual costs and the amount covered by the Scholarship, the candidate may seek complementary funding, usually from either the home or the host institution.
- The host institution must be different from the candidate's home institution and should be in a different country.
- The home and host institutions must give explicit approval by a signed letter.
- A successful applicant will be permitted to adopt the title “IAPR International Scholar” for the period of the award.

Click here for the full Call for Applications.

Contact information:

IAPR-EC Chair
c/o Josep Lladós

josep.llados@cvc.uab.es

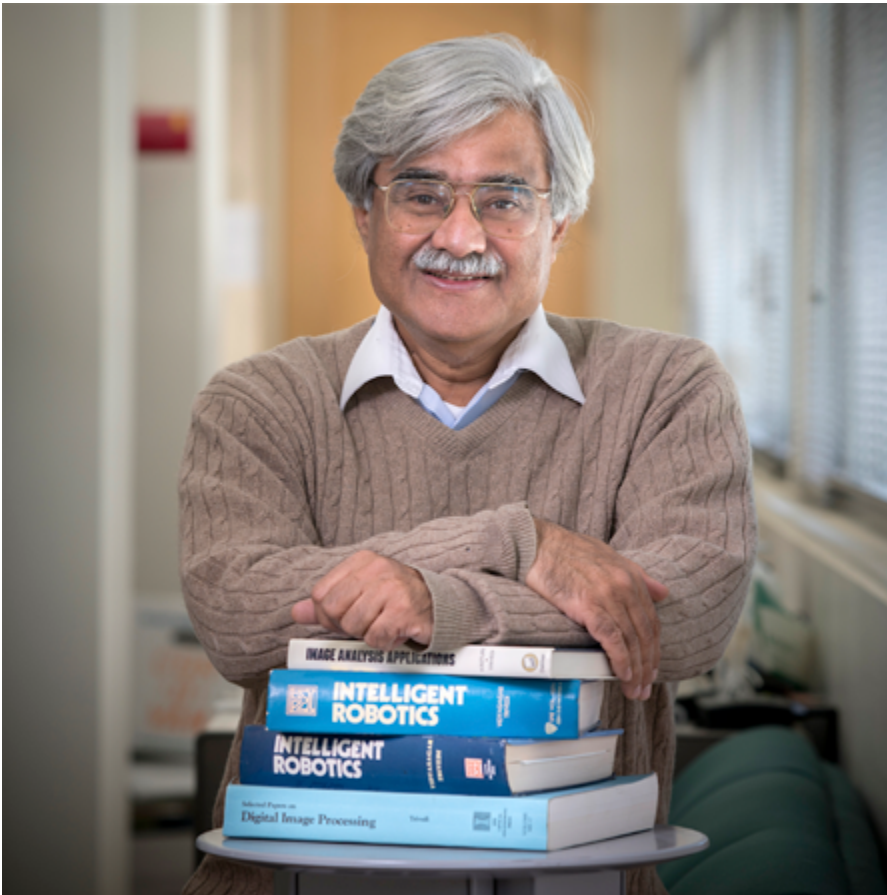
IAPR Secretariat

c/o Linda O’Gorman

secretariat@iapr.org

Getting to know...Mohan Manubhai Trivedi, IAPR Fellow

Safe and smart automobiles equal... human intent prediction plus robotics that learn



Mohan Manubhai Trivedi, IAPR Fellow

ICPR 2010, Istanbul

For contributions to vision systems for situational awareness, intelligent robotics and human-centered vehicle safety systems

Mohan M. Trivedi is a Distinguished Professor of Electrical and Computer Engineering and founding director of the Computer Vision and Robotics Research Laboratory, as well as the Laboratory for Intelligent and Safe Automobiles (LISA) at the University of California, San Diego. He has mentored over 30 PhD and 75 Master's scholars. Currently, Trivedi and his team pursue research in intelligent vehicles, machine perception, machine learning, human-robot interactivity, driver assistance, active safety and intelligent transportation systems. He received the IEEE ITS Society's highest honors, the Outstanding Research Award (2013), and the LEAD Institution Award (2015) for LISA research. Trivedi's team has played a key role in major research initiatives on human-centered vehicle collision avoidance, lane-change/turn/merge assistance systems, vision-based passenger protection systems for "smart" airbags, predictive driver intent and activity analysis systems, and panoramic-view surround safety systems. Trivedi serves regularly as a consultant to industry and government agencies in the U.S. and abroad.

by [Mohan Trivedi](#), Director, Computer Vision and Robotics Research Laboratory, University of California, San Diego (UCSD), USA

I have been most fortunate to enjoy an academic career spanning four decades. During this period, I participated and contributed to multiple research areas and learned a lot from bright individuals as a student, collaborator, teacher and mentor. My formal initiation in the Pattern Recognition field was in graduate school. My research was in the multispectral machine-vision area, and I thought that learning mathematical foundations of Pattern Recognition would be useful. Luckily for me, the math department at Utah State had just hired an assistant professor who was going to teach a year-long sequence in Pattern Recognition for the first time. The young scholar who taught that course would eventually earn a stellar reputation as a pioneer in cluster analysis and machine learning. I am talking about Professor James Bezdek, who with his infectious enthusiasm, meticulous scholarship, and crystal clear presentations led me to learn principles of pattern recognition and explore novel applications that I have never forgotten. I owe Jim, David Anderson (an experimental design and statistical analysis guru), and the late Clair Wyatt (an electro-optical system designer par excellence) an infinite debt of gratitude for their mentoring and friendship.

Over the years, I was able to play an active role in the early-stage development of texture and multispectral image analysis, sensor-based autonomous robotics, intelligent and automated vehicles, 3D human body modeling, gesture and activity

analysis, intelligent transportation systems, driver assistance systems and human-robot interaction. Our contributions in these areas have had direct impact on real-world systems deployed for homeland security, video surveillance, traffic flow monitoring and analysis, active safety systems (including lane/break/merge/urban assist, collision avoidance, pedestrian safety systems), human body, affect and intent analysis. Our decade-long research in machine vision and learning algorithms for observation of driver behavior (by “looking in”) in synchrony with observation of situation criticalities (by “looking out”) for predictive, human-centered intelligent vehicles is recognized as a major influence on a new generation of “safe” automobiles. Our team also played a key role in introducing distributed, cooperative multiple “smart camera networks” for situational awareness at multiple levels. Such systems are now widely deployed in homeland security, surveillance, military, and intelligent (“smart”) spaces. Major initiatives undertaken by the National Academies (Transportation Research Board) and Federal Highway Administration (Video Analytics) as well as industry have been influenced by our unique contributions in holistic vision-based approaches to observing, learning and mitigating situation criticalities to radically improve road safety. I was very pleased to read that three papers published by us have been judged to be “classics” in a comprehensive citation survey of all papers published in the past fifteen years¹ (the most of any single group). I am really very happy that all of

¹J. A. Moral-Muñoz, et al, "Analyzing Highly Cited Papers in Intelligent Transportation Systems," IEEE Transactions on Intelligent Transportation Systems, April 2016.

these accomplishments are results of talented, curious, diligent and enthusiastic young scholars. I get inspired and energized on a daily basis by them. It is gratifying to note that they all continue to make important contributions at industrial and academic institutes after graduation. I am also grateful to the generous and sustained support of our research pursuits by various government and industry sponsors and for the opportunity to showcase our lab's technical advances to the public at large at events such as the Consumer Electronics Show 2016² ([introducing our Safe Shield technology](#)) and subsequent demonstrations at IEEE Computer Vision and Pattern Recognition 2016.. For the past couple of decades, our team has focused on the research challenges underlying the following three interrelated themes:



Theme 1: Observing Humans: Body, Affect, Gestures, Activities and Intent Analysis

Observing humans and understanding their actions pose interesting challenges to computer vision. Human bodies are complex, multipart, deformable objects. There is also self-occlusion due to different body parts. We are tackling research in this important area at a number of levels. At

²Frankie Lu, Sean Lee, Ravi Kumar Satzoda, and Mohan M. Trivedi, "Embedded Computing Framework for Vision-Based Real-Time Surround Threat Analysis and Driver Assistance," IEEE Conference Computer Vision and Pattern Recognition - Workshop on Embedded Vision (BEST DEMO AWARD), 2016.

one end we consider modeling, analysis and tracking of the full body, while at the other end we are interested in the analysis of body parts, especially the head, face, eyes and hands, due to their uniquely important role in communication and interactions. Predicting what a human will do by accurately detecting “intent” to take a certain action has been a very exciting and highly productive research area for our team. We started investigating this topic more than a decade ago, have been successful in developing novel machine-vision and learning algorithms, and have been able to undertake principled evaluations with real-world applications ranging from surveillance to intelligent vehicles

Theme 2: Deriving “Holistic” Situational Awareness

To derive situational awareness from the semantic interpretation of objects, events and activities, we designed an overall architecture and control scheme in addition to specific video algorithms to support “naturalistic” human activities, real-world environments, and real-time response. We developed the Looking-in and Looking-out (LiLo) framework to gain new insights by correlating visual, contextual information in and outside of a highly automated vehicle, enabling the system to learn and predict a driver’s, pedestrians’, as well as human drivers’ behaviors and intentions³ in the intelligent vehicle context. For surround context, our focus (with video sensors) is mainly on detection, localization and mapping of objects (moving or stationary) in the immediate vicinity of a moving vehicle. Our early emphasis on interpreting high level semantic cues like

³E. Ohn-Bar and M Trivedi, "Looking at Humans in the Age of Self-Driving and Highly Automated Vehicles," IEEE Transactions on Intelligent Vehicles, 2016.

trajectories, maneuvers, and behaviors provide unique and clear insights for making robotic vehicles move around in a manner that humans understand and trust. We introduced the concept of Dynamic Panoramic Surround (DPS) to capture and analyze the full, 360° panoramic visual field around a moving vehicle with novel machine learning based algorithms for situation criticality understanding with multisensory datastreams captured with imaging lasers, radars, and cameras. In extensive experimental studies, the efficacy and feasibility of such approaches are regularly validated in test after test.

Theme 3: Enhancing Human-Centered Interactivity

We have successfully established several multidisciplinary research activities focused on the design and evaluation of new types of Human-Centered Intelligent Driver Support Systems and their components. This involves systematic investigations to understand and characterize driver behavior and ethnography surrounding the task of driving as well as the design of a suite of sensors and interfaces which are most appropriate in “distraction free” driving. We have outfitted a number of customized, instrumented vehicles for conducting experiments. These testbeds have provided rich contextual information about vehicle dynamics, including the surround and state of the driver, which are captured for careful, detailed ethnographic studies. Also captured is the realistic data for developing algorithms to analyze multi-sensory signals for active safety. Our research aims to resolve pending problems and issues encountered in developing models for the driver, vehicle, vehicle

surround and various specific activities associated with the complex task of safe driving. Our team has successfully developed new insights and algorithms for capturing the dynamic vehicle-surround information in addition to the state, intent and activity patterns of drivers. We have also introduced a new type of “dynamic active display” that presents visual information to the driver in a manner that minimizes the deviation of the direction of his or her gaze without adding to unnecessary visual clutter. These contributions underscore the efficacy and undeniable promise of “human-centric active safety” systems in enhancing the safety and comfort of an automobile.

These contributions and insights are directly influencing new initiatives and research programs in the field, including those pursued by the U.S. Transportation Research Board of the National Academies, the Federal Highway Administration, and various industry groups. Our research has had a major impact on a new generation of Driver Assistance Systems for the commercial market. Examples of these include: panoramic vision systems used in park assistance; lane-keeping assist; attention monitoring; brake, lane change and merge intent prediction systems for Volkswagen and Audi⁴, and “Holistic Looking-In and Looking-out” algorithms and systems at Toyota⁵.

Intelligent vehicles and transportation systems are at the core of a transformation

⁴Tawari, et al, Looking-in and Looking-out Vision for Intelligent Assistance: Driver Attention and Dynamic Surround for Safe Merging and Braking, IEEE Intelligent Vehicles Symposium, 2014.

⁵Satzoda, Gunaratne, Trivedi, Analytics by Semantics for Naturalistic Driving Studies, IEEE Intelligent Vehicles, 2014.

in how we move people and goods around. It is wonderful to observe the excitement, activities as well as rising expectations around our research field. Will strictly self-driving cars ever prove technologically feasible? A few years ago, it seemed pie in the sky. Today, most experts say the technology is feasible, but the question may be overly simplistic. The technology may be feasible, but will people accept the tradeoffs? Even today’s autonomous driving systems would be safe if everyone agrees to drive under, say, 20 miles per hour or only on restricted roadways, but who would accept such a tradeoff, even to reduce traffic accidents? We anticipate that autonomous driving will one day reduce the number of fatalities on the road by reducing mistakes caused by human error, but at what price? What performance metrics for autonomous vehicles and associated subsystems are needed, and who will set them? And until the technology is more advanced, should manufacturers be allowed to sell cars without steering wheels – or any technology that is critical to keeping the driver aware of his or her surroundings with the ability to override the autonomous controls in the face of an imminent threat? The questions go on. I cannot imagine a better time than the present for young scholars to get involved in pursuing important and exciting research challenges with clear promise to make our lives safer, more comfortable, efficient, and ultimately more rewarding.



IAPR...The Next Generation

In this series of Feature Articles, the IAPR Newsletter asks young researchers to respond to three questions:

- Briefly: How did you get involved in pattern recognition and what technical work have you done?
- In more detail: What is/are your current research interest(s)?
- How can the IAPR help young researchers?

~Arjan Kuijper, Editor -in-Chief

Lu Bai



Dr. Lu Bai received his Ph.D (under the supervision of Prof. Edwin R. Hancock) from Department of Computer Science, University of York, UK, in 2015. He is currently an Assistant Professor in the Department of Computer Science, School of Information, Central University of Finance and Economics, Beijing, China. He received the “2014 National Award for Outstanding Self-financed Chinese Students Study Abroad” granted by China Scholarship Council, in April 2015. His research interests include structural pattern recognition, quantum walks on networks, and graph matching, with a particular emphasis on kernel methods, complexity analysis on (hyper) graphs and networks, and their applications in computer vision, bioinformatics, financial analysis, etc.

From 2011 to the present, he has published more than 10 journal papers, including 5 papers in “Pattern Recognition”, 1 paper in the “Journal of Mathematical Imaging and Vision”, 1 paper in “Pattern Recognition Letters”. He has also published more than 30 papers in refereed conferences, including ICML, IJCAI, ECML-PKDD, ICPR, CAIP, ICIAP, GbRPR, and S+SSPR.

Dr. Bai received his BSc and MSc from Macau University of Science and Technology (MUST).

Editor's note:

Lu Bai was the winner of the Eduardo Caianiello Best Student Paper Award at ICIAP 2015. Please see the report on this conference in the January 2016 issue of the IAPR Newsletter <http://www.iapr.org/docs/newsletter-2016-01.pdf>.

~ Arjan Kuijper, Editor-in-Chief

by [Lu Bai](#), PhD, School of Information, Central University of Finance and Economics, Beijing, China

Briefly: How did you get involved in pattern recognition and what technical work have you done?

During the years of my undergraduate studies at the

Macau University of Science and Technology (MUST), I was exposed to a broad range of topics in computer science, and I developed an interest in using computer intelligence to solve basic machine learning problems such as forecasting and classification. As I continued my Master's study at MUST, I developed a prototype system that

automatically selected the most suitable fuzzy inference model. These valuable experiences encouraged me to further my study as a PhD student, focusing on machine learning and pattern recognition. I am mostly grateful to Prof. TANG Zesheng, Prof. TIAN Xiaolin, and Prof. DING Liya, who guided me with their wisdom and hardworking spirit and who supported me when I applied for the PhD program at the University of York, UK.

I started my PhD program in October, 2010 at the Department of Computer Science, University of York, UK. My supervisor was Prof. Edwin R. Hancock, a holder of the "Royal Society Wolfson Research Merit Award" and the leader of the "Computer Vision and Pattern Recognition" research group. The group works mainly in the areas of computer vision, image processing and analysis, and statistical and structural pattern recognition. When I arrived in the UK, the group members showed me some of their research and I was deeply impressed by the beauty of machine learning and pattern recognition algorithms. I decided to work hard to shape myself well.

Graph-based relational representations are widely used in the field of structural pattern recognition, and have proven to be both powerful and flexible. Compared to vector based pattern recognition, a major drawback with graph representations is the lack of a natural correspondence order for the vertices or edges. This drawback limits the direct application of standard machine learning algorithms to problems like classifying or clustering graphs. One way to overcome this problem is to use graph kernels. In pattern recognition, graph kernels are powerful tools for characterizing graphs. Since graph kernels can characterize graphs in a high dimensional space and thus better preserve graph structures.

Generally speaking, most of the recently introduced graph kernels are in fact instances of the generic R-convolution kernel proposed by Prof. Haussler in 1999.

R-convolution is a generic way for defining graph kernels based on comparing all pairs of decomposed substructures. Specifically, any graph decomposition can be used to define a kernel, e.g., the graph kernels based on comparing all pairs of decomposed a) walks, b) paths and c) restricted subgraphs or subtree structures. However, as the R-convolution kernels rely on computations over the graph vertices or edges, they cannot be efficiently computed in an algebraic manner. Moreover, these kernels suffer from the problems of ignoring structural correspondence information and discarding unisomorphic substructures. As a result, developing effective and efficient graph kernels still remains a challenge, and fortunately, that is one of my major research topics.

My first PhD research task was to investigate whether the Jensen-Shannon divergence can be used as a means of developing a graph kernel for graph clustering. To realize this goal, I became quite familiar with mutual information theory, the von-Neumann entropy concept, and the kernel principle components analysis (kPCA). I also compared the pros and cons of existing graph kernels and identified significant research gaps. Prof. Hancock guided me with his profound knowledge, perceptive insights and rigorous attitude. Thanks to all these efforts, I developed a new Jensen-Shannon graph kernel for the problem of graph clustering. I used the kernel associated with the von-Neumann entropy to calculate the kernel matrix for graphs. I also used the kPCA to embed the graphs into a vectorial feature space. The experimental results revealed that the proposed graph kernel gives good clustering results on graphs

extracted from a computer vision database.

In more detail: What is/are your current research interest(s)?

Currently, my research focuses on graph kernels, complex networks, and quantum walks and their applications in computer vision, bioinformatics, financial data analysis, etc. The first stream of my research is on developing efficient and effective graph kernels. I have developed several novel graph kernels including the mutual information-based kernel, the quantum walk-based kernel, the depth-based vertex/edge alignment kernel and the transitive alignment kernel. These graph kernels overcome the limitations of existing methods by establishing novel frameworks of characterizing graphs, decomposing graphs into substructures, identifying the correspondence between vertices/edges, calculating the similarities or dissimilarities between graphs, etc. The experimental analyses of these newly developed kernels clearly demonstrate that they outperform state-of-the-art graph kernels, in terms of classification accuracy and computational efficiency. My second research focus is on complex networks. I have developed a depth-based representation on graphs and hypergraphs. Thirdly, I have investigated quantum walk theory and how to use quantum walk and entropic characteristics to develop more efficient graph kernels and perform graph matching.

In addition, my co-authors and I have investigated how to use graph structures and graph kernels to develop effective feature selection methods for P2P lending analysis. Feature selection has been a fundamental research topic in pattern recognition and machine learning. By choosing directly from the input data space a

subset of features that maximizes a generalized performance criterion, feature selection reduces the high dimensionality of the original data and improves learning performance. Despite its significance, most existing feature selection methods use the original features as vectors, leading to significant information loss between pairwise samples of each vectorial feature. On the other hand, P2P lending data are usually highly correlated. As result, traditional vectorial representations of features influence the performance of most existing feature selection methods employed on P2P lending analysis. To overcome these problems, we proposed to transform each original vectorial feature into a feature graph representation. The main advantage of using this new feature representation method is that the graph-based feature can incorporate the relationship between samples of each original vectorial feature, thus leading to less information loss. More specifically, by measuring the Jensen-Shannon divergence (kernel) between graph-based features, we developed a method to compute the discriminant power of each feature with respect to the target feature. Based on this calculation, an optimal subset of features can be selected. In one of our recent papers, the experimental evaluation on P2P lending data from China demonstrates better performance than traditional P2P lending analysis methods.

Moreover, since I am working as an Assistant Professor in the Department of Computer Science, Central University of Finance and Economics, I have more opportunities to apply machine learning algorithms to the field of financial data analysis. I have successfully applied for a research

project entitled "Research on Financial Analysis by Learning from Graph-based Kernel Machines", which is supported by National Natural Science Foundation of China. Furthermore, my colleague, Dr. Lixin Cui, and I also successfully applied for another research project entitled "Graph-based feature selection algorithm and its applications in P2P lending credit risk evaluation", which is supported by National Natural Science Foundation of China. In the near future, I will also conduct some relevant investigations.

How can the IAPR help young researchers?

As a young researcher in the field of pattern recognition and machine learning, I believe that the most important factor for the success is to stay motivated and keep growing and achieving. The field is developing rapidly, with numerous excellent research papers published every year in reputable journals and conferences. Young researchers like myself, need to publish our papers in the top journals and attend the top conferences to let our voices be heard and to communicate with scholars who share similar research interests. Such a research atmosphere will greatly help encourage young researchers to excel in the field.

I also believe that experiences and social networks can be greatly enriched by visiting other famous research labs and universities. Having the opportunity to be a visiting scholar, one can expose himself to the cutting-edge research topics in the area and collaborate with famous researchers in this field to enhance research and publish high-quality papers.

Third, I believe it is also important

to build a close connection between the academic circle and industrial applications. By promoting the work of young researchers, we can find value in what we are doing and also collaborate with industry.

Young researchers willingly and actively searching for these opportunities would strongly benefit from the full-coverage activities, conferences, workshops, and scholarships offered by organizations such as IAPR.

IAPR Then and now...

IAPR Newsletter

Vol. 16 No. 1, January 1994

As the new Editor of the *IAPR Newsletter*, Prof. Maria Petrou introduced humor into this publication.

At ICPR 2016, the first [Maria Petrou Prize](#) will be awarded in her honor.



When the IAPR Public Relations Officer, Professor Goodimage, saw the photograph (above) of the newly-appointed newsletter editor, he was dismayed!

He asked the Statistics Department of the University of Leeds to do their best to sort it out.

This research group applied a technique described in an article by K V Mardia and J Hainsworth in the book "Advances in Applied Statistics: Statistics and Images" (Volume 1, 1993, edited by K V Mardia and G K Kanji).

The result is shown below.



From the

News from the Executive Committee of the IAPR



by [Alexandra Branzan-Albu](#) (Canada)
IAPR Secretary



Victoria, September 29, 2016

I write this column on a bright autumn day, enjoying the gentle transition from summer to fall. Among other things, the first days of fall mean for me back-to-school: feeling the youthful energy of returning students on our campus, watching the Brownian movement of freshmen in search of their classrooms or labs, and trying hard to find a spot in campus coffee places full to the brim with studious young people.

The arrival of fall also brings new deadlines for grant proposals and academic publications. Most of the deadlines related to ICPR are past; it is time now to finalize travel arrangements for Cancun! To date, 765 participants from 54 countries have registered for ICPR 2016, which means that our flagship conference will again offer many opportunities for networking, interacting, maintaining existing collaborations, and initiating new ones.




IAPR Travel Stipends have been awarded to 50 authors of ICPR papers. We received 247 applications, which were ranked according to multiple criteria. This year, our strategy was to give high priority to PhD students. We also favored authors of multiple papers and authors from countries with financial difficulty to travel to Cancun.

The IAPR award winners have been announced. Prof. Robert Haralick is the recipient of the 2016 King Sun Fu Prize; Prof. Fei Fei Li the 2016 J.K. Aggarwal Prize; and Prof. Michal Irani is the first recipient of the new Maria Petrou Prize. We are all looking forward to their plenary lectures!

We are pleased to announce that, for the first time at ICPR, there will be a Women's Coffee Break. following the Invited Talk of Prof. Michal Irani, the Maria Petrou Prize Winner. On the same day, women are invited to a Women's Lunch Break at a nearby restaurant.


The tentative program of ICPR 2016 is available at <http://www.icpr2016.org/site/at-glance>. The conference promises to be very exciting, from both academic and social viewpoints. We hope that many *Newsletter* readers will be able to come and participate.

I wish you a happy reading of the October issue of the *IAPR Newsletter*!



**Coffee Break
for Women
at ICPR 2016**

Tuesday, December 6, 2016
10:00am
following the
Maria Petrou Lecture



Don't miss these
[Calls from IAPR Committees:](#)

IAPR Nominating Committee
Call for Nominations for the
2016-2018 IAPR ExCo

IAPR Education Committee
Call for Applications for
IAPR Research Scholarships

IAPR ExCo Call for Proposals
for Summer Schools

IAPR Technical Committee News

This section of the IAPR Newsletter will publish short, timely items by and about the IAPR's Technical Committees.

There are three main aims:

1. to give the IAPR's TCs regular access to the broader IAPR community
2. to introduce the various TCs to those who are new to the IAPR and
3. to keep the rest of the IAPR community interested and informed about TC happenings.

~Arjan Kuijper, IAPR Newsletter EiC

IAPR TC7 - Remote Sensing and Mapping

<http://www.iapr-tc7.de/>

[Eckart Michaelsen](#), Chair

[Jie Shan](#), Vice Chair

This committee promotes the use of sophisticated pattern recognition methods in the analysis of remotely sensed data. Most frequent these are satellite images or data taken from airborne platforms (manned as well as un-manned). A website is maintained monitoring its activities: <http://iapr-tc7.de/>.

One main such activity is the organization of a series of workshops that usually come in close cooperation with the biannual ICPR congresses. In late 2016, we will have again such a PRRS as one-day event preceding the congress in Cancun: <http://iapr-tc7.de/prrs/PRRS2016.htm>. For this we received a good set of international contributions, did single blind peer-reviewing, and the notifications are issued by now.

As a follow-up of the PRRS workshops we also assemble special issues in first class journals. E.g. – following the PRRS-2014 in Stockholm – we now have a special issue on PRRS in Elsevier's Pattern Recognition Letters coming in late 2016. And the next special issue on PRRS will appear in IEEE-JSTARS.

TC7 is too small to provide own benchmarks etc. This is one of the reasons why we cooperate very closely with the Inter Commission Working Group for Pattern Analysis in Remote Sensing of the ISPRS: <http://www2.isprs.org/commissions/comm3/icwg37.html>. Since the last ISPRS congress in Prague this summer this section has the acronym ICWG II/III. There is also close cooperation with IEEE-GRSS, see <http://www.grss-ieee.org/>.

If you are working in this exciting field, and want to be kept up-to-date or maybe contribute to the TC's activities please mail to eckart.michaelsen@iosb.fraunhofer.de.



Pattern Recognition in Remote Sensing 2016 Cancun, Mexico, 04 December 2016



Workshop Chairs: Eckart Michaelsen, Germany and Jie Shan, USA

Program Committee

Selim Aksoy, Turkey
John E. Ball, USA
Jon A. Benediktsson, Iceland
Lorenzo Bruzzone, Italy
Jocely Chanussot, France
David Clausi, Canada
Melba Crawford, USA
Fabio Dell'Acqua, Italy
Jenny Q. Du, USA
Surya S. Durbha, India
Paolo Gamba, Italy
Stefan Hinz, Germany
Xiangyun Hu, China
John Kerekes, USA
Wei Li, China

Farid Melgani, Italy
Gabriele Moser, Italy
Antonio J. Plaza, Spain
Paul Rosin, UK
Ribana Roscher, Germany
Uwe Soergel, Germany
Uwe Stilla, Germany
Kenji Takasaki, Japan
Florence Tupin, France
Bjoern Waske, Germany
Cem Unsalan, Turkey
Xuezhi Yang, China
Alper Yilmaz, USA
Nicolas H. Younan, USA

Keynote Speaker: [Devis Tuia](#)



University of Zurich Department of Geography

<http://iapr-tc7.de/prrs/PRRS2016.htm>

More IAPR Technical Committee News



IAPR TC12 Multimedia and Visual Information Systems

<http://iapr-tc12.info>

[Henning Müller](#), Chair

[Sergio Escalera](#) and [Martha Larson](#), Vice Chairs

IAPR TC12 has had several ongoing activities in the past and coming months that are described below.

The ImageCLEF benchmark was organized and a workshop was held in Evora, Portugal, in September 2016 (<http://www.imageclef.org/>). The MediaEval benchmark was also organized with a workshop in Amsterdam in October 2016 (<http://www.multimediaeval.org/>).

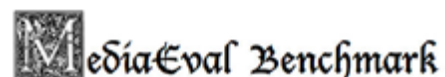
The third edition of the Challenges in Machine Learning (CiML) workshop (<http://ciml.chalearn.org/>), will be held at NIPS 2016 in Barcelona, and it will focus on the exploration of the opportunities that challenges offer as teaching tools:

1. benefits and limitations of challenges to give students problem-solving skills and teach them best practices in machine learning;
2. challenges and continuous education and up-skilling in the enterprise;
3. design issues to make challenges more effective teaching aids;
4. curricula involving students in challenge design as a means of educating them about rigorous experimental design, reproducible research, and project leadership.

This year several invited speakers will discuss these topics, including Henning Muller, IAPR TC-12 Chair. The event is organized, among others, by Prof. Isabelle Guyon and IAPR TC-12 Vice-Chair Dr. Sergio Escalera.

In the 2016 ChaLearn Looking at People challenge that was organized in collaboration with IAPR TC-12, the first impressions of people were a main topic. For ECCV, the participants developed solutions for recognizing personality traits of users in short video sequences containing audio-visual information. A large dataset was collected, sponsored by Microsoft, with 10,000 15-second videos from YouTube, annotated with personality traits by AMT (Amazon Mechanical Turk) workers. The traits corresponded to the “big five” personality traits used in psychology and well known to hiring managers using standardized personality profiling: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to experience. For ICPR, in addition to personality trait recognition, the competition also included additional tracks in the topics of large scale gesture recognition and context experience. Detailed descriptions of the topic and results of the challenges organized at ICPR 2016 can be found in [1] and in (<http://gesture.chalearn.org/>). The competitions and workshops were co-organized, among others, by Prof. Isabelle Guyon, Dr. Hugo Jair Escalante, Dr. Sergio Escalera, Prof. Henning Müller, and Prof. Martha Larson, from ChaLearn, ImageCLEF, MediaEval and IAPR TC-12.

[1] Hugo Jair Escalante, Víctor Ponce, Jun Wan, Michael Riegler, Baiyu Chen, Albert Clapés, Sergio Escalera, Isabelle Guyon, Xavier Baro, Pal Halvorsen, Henning Müller, and Martha Larson, [ChaLearn Joint Contest on Multimedia Challenges Beyond Visual Analysis @ ICPR 2016](#).



Meeting Reports

Conferences, Workshops & Summer Schools



General Chairs:

[Apostolos Antonacopoulos](#), University of Salford, UK

[Basilis Gatos](#), NCSR Demokritos, Greece

by the General Chairs

DAS2016 was the 12th edition of the 100% participation, single-track IAPR sponsored workshop focusing on system-level issues and approaches in document analysis and recognition. As in previous editions, the workshop comprised invited speaker presentations, oral, poster, tutorial and demo sessions as well as integral working group discussions. DAS brings together practitioners and theoreticians, industry researchers and academics, representing a range of disciplines with interests in the latest developments in the field of document analysis systems.

The workshop was held in the spectacular setting of the island of Santorini with the conference centre high on the edge of the caldera overlooking both the main city of Fira and the sea and islands below.

DAS2016 received 162 regular

paper submissions from all six inhabited continents, of which 78 (46%) were accepted after a rigorous review process directed by the three Program Chairs (Michael Blumenstein, Josep Lladós and Dan Lopresti), involving 44 Program Committee members and 69 additional reviewers. Of those accepted papers, 32 (20%) were scheduled for oral presentation and 46 (28%) as posters. In addition, 21 short papers describing emerging ideas and work in progress were also accepted for poster presentation (although not published in the proceedings).

The most popular topics for accepted papers, in order, were: information extraction from document images; historical document analysis; document image analysis applications; document retrieval systems; camera-based document image analysis; and document analysis for digital humanities.

The workshop proceedings were published by the IEEE Computer Society's Conference Publishing Services (CPS) and are available through IEEE-Xplore: <http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=7485953>.

Participants (126 in total from 22 countries) actively experienced a rich program of presentations, demonstrations and working group sessions, punctuated by ample breaks for discussions (the early spring Aegean sunshine and local delicacies enhanced the usual collegial atmosphere).





“Keyword Spotting in Handwritten Documents using Projections of Oriented Gradients”.

In addition to the everyday social environment of breath-taking views and al fresco dining, on the second evening of the workshop participants enjoyed a tour of the



Two highlights of the technical program were the [invited talks](#), each providing insights from industrial as well as academic research. The opening keynote was delivered by Ashok Popat (Google Inc), with the title "Developing Multilingual OCR at Google". The second, the IAPR Keynote, was given by Jean-Marc Ogier (University of La Rochelle) on "How Companies and the Academic World Can Interact Together to Generate Innovations Related to Document Analysis".

In addition to the main program, two very well attended [tutorials](#) were organised on April 11th, starting in the morning with "Scene-Text Localization, Recognition, and Understanding" by Albert Gordo (Xerox Research Center Europe) and Lluís Gómez i Bigordà (Computer Vision

Center, Universitat Autònoma de Barcelona) and continuing in the afternoon with "Tesseract Blends Old and New OCR Technology" by Ray Smith (Google Inc).

The Nakano Best Paper Award was given for the best overall paper presented at the workshop: "CNN Based Transfer Learning for Historical Chinese Character Recognition" by Yejun Tang, Liangrui Peng, Qian Xu, Yanwei Wang, and Akio Furuhashi. The Best Student Paper award was presented to Marcel Würsch for his paper (also co-authored by Rolf Ingold, and Marcus Liwicki) "SDK Reinvented: Document Image Analysis Methods as RESTful Web Services". Finally, the Best Poster Award was given to George Retsinas, Georgios Louloudis, Nikolaos Stamatopoulos and Basilis Gatos, for the paper entitled

island, starting with the village of Oia (world famous for sunset watching), continuing with a winery tour and tasting of the local wines, and culminating with the workshop banquet at a traditional seaside restaurant where music and dancing was very actively joined in until late.

We feel, from participants' feedback that DAS2016 was successful both scientifically (in terms of the quality of papers and discussions) and in continuing the community building that the DAS workshop series is known for. Looking forward to a long continuation of DAS workshops!

Proceedings of DAS 2016 have been published in [IEEEExplore](#)

IAPR Then and Now...22 Years Ago

IAPR Newsletter Vol. 17 No. 1, January 1995

In his "Report on the activities of IAPR TC-10 Graphics Recognition", TC-10 Chair Karl Tombre included this item:

"Just after ICPR in Jerusalem, more precisely on October 18-20, 1994, a workshop on Document Analysis Systems (DAS'94) was held in Kaiserslautern(G ermany). Sponsors were IAPR TC-2, TC-10 and TC-11, and Daimler Benz. Workshops chairs: Andreas Dengel (Germany) and Larry Spitz (USA). The topics of interest to TC-10 were largely covered in this workshop."

13th Summer School for Advanced Studies on Biometrics for Secure Authentication Biometrics, Forensic Science and the Quest for Identity

Alghero, Italy
June 20-24, 2016

Directors:

[Massimo Tistarelli](#) (University of Sassari, Italy)

[Josef Bigun](#) (Halmstad University, Sweden)

Enrico Grosso (University of Sassari, Italy)

[Anil K. Jain](#) (Michigan State University, USA)



by Massimo Tistarelli

This was the 13th edition of a strongly established training course started in 2003 to promote knowledge dissemination and research in Biometrics and related fields. The school was technically co-sponsored by the IAPR and the IEEE and co-organized by the EU RISE project IDENTITY. The continuous sponsorship from Morpho is also gratefully acknowledged.

The school's main theme was related to the application of multimodal biometric systems in forensic and security applications, but with a specific attention to mobile applications. The school particularly addressed the impact of biometric technologies in criminal investigations and the algorithmic solutions to facilitate the integration of biometrics in operational scenarios.

Several subjects were taught at the summer school forming a total of 24 hours of theoretical lectures from 17 different lecturers and 4 hours of guided practical sessions on face recognition using MatLab¹ tools. The subjects ranged from fundamentals such as machine learning and pattern recognition techniques applied to biometric to more advanced

¹The school committee is grateful to MathWorks for providing a special trial version of MatLab software, specifically for the school students to develop the practical sessions.

topics such as neuroscience and applied subjects such as mobile and wearable devices, large-scale evaluation and the deployment of biometrics technologies in forensic science. This 13th edition of the summer school featured a line-up of exceptional lecturers, selected from the editorial boards of top-level scientific journals and conferences. Prof. James Haxby, an outstanding neuroscientist, presented a lecture on the representation of visual data in the brain and the topographic mapping to design such representations from fMRI recordings. Dr. Peter Claes, from the University of Leuven, presented a novel and challenging scenario for the prediction of faces from DNA. Prof. John Daugman, a pioneer and inventor of iris recognition, presented a lecture on the epigenetics of iris recognition and the variability of biometric traits based on their measured entropy. All lecturers, among the most highly reputed experts in their fields, presented the most up-to-date view in Biometric technologies and Forensic applications.

The complete list of lecturers and the presented lectures is as follows:

Monday, June 20

- Prof. Arun Ross (Michigan State University, USA) An introduction to biometrics and multibiometrics.
- Prof. Alessandro Verri (University of Genova, Italy) Machine learning techniques in biometrics.
- Prof. Massimo Tistarelli (University of Sassari, Italy) Face recognition.
- Prof. Davide Maltoni (University of Bologna, Italy) Fingerprint recognition.

Tuesday, June 21

- Dr. Peter Claes (University of Leuven, Belgium) Predicting

Faces from DNA.

- Prof Mark Nixon (University of Southampton, UK) Soft biometrics.
- Dr. Thirimachos Bourlai (West Virginia University, USA) Practical biometric recognition systems and project - PART 1 and 2.
- Student presentations (4)

Wednesday, June 22

- Dr. Jonathon Phillips (NIST, USA) Grand challenges in face recognition and visual biometrics.
- Prof. John Daugman (Cambridge University, UK) Biometric Entropy, Epigenetics, and Iris Recognition.
- Prof. Alice O'Toole (University of Texas at Dallas, USA) Biological Recognition of Human Faces & Bodies.
- Prof. Ida Gobbi (University of Bologna, Italy) Mechanisms for Recognition of Familiar Faces.
- Prof. James Haxby (Dartmouth College, USA) Commonality of the Fine-grained Structure of Neural Representations across Brains.

Thursday, June 23

- Prof. Chang-Tsun Li (University of Warwick, UK) Multimedia Forensics and the EU IDENTITY Project.
- Prof. John Mason (University of Swansea, UK) Speaker Recognition.
- Dr. Emine Krichen (Safran Morpho, France) Exploiting Biometrics: an Industrial Perspective.

Friday, June 24

- Prof. Nasir Memon (New York University, USA) Touch-based Gesture for Authentication.
- Prof. Didier Meuwly (Netherlands Forensic Institute, Netherlands) The Quantification of Forensic Evidence.
- Dr. Thirimachos Bourlai (West Virginia University, USA)

Practical biometric recognition systems and project - PART 3.

- Prof. Emilio Mordini MD (CSSC Roma, Italy) Ethics and Governance of Global ID.
- Prof. Enrico Grosso (University of Sassari, Italy) Concluding remarks and discussion.

41 participants attended the school lectures. The class was formed by students coming from different universities, industries and research centres in the following 22 different countries (in brackets are the number of participants from this country, if greater than one): Algeria, Austria (2), Brazil (6), Croatia, France (3), India (3), Ireland, Italy (6), Macedonia, Mexico, Netherlands (2), Norway, Poland, Portugal, Russia, Singapore, Slovenia (2), Spain, Switzerland, United Kingdom (3), USA (2).

This year's students demonstrated quite a deep knowledge of the theoretical background and the application of biometrics to forensic cases as well to other scenarios. Most of them are either working directly in the design of biometric systems, or pursuing high-level scientific research in the field. This not only facilitated a very good interaction between students and lecturers, even within the theoretical lectures, but also stimulated and challenged even the most experienced lecturers with questions and requests for explanations in the course of almost all presentations. As a result, both the students and lecturers were much involved in technical discussions and plans for collaborations.

All students actively took part in the practical sessions. A project was assigned to group splits of the class and an award was assigned to the best three projects.

Remarkably, representatives of

government agencies and forensic laboratories also attended the school courses. This not only denotes the high reputation gained by the school, but also a deep interest of different government offices in the adoption of newer biometric technologies to the service of the citizens.

A total of four students from different countries were partially supported by a grant from the IAPR sponsorship. The awarded students were selected on the basis of three criteria: (1) Public recognition of their research record (number of publications, patents, talks at workshops and conferences, participation to previous meetings); (2) Year of enrolment in the Phd program, more advanced students were privileged over younger ones; (3) Active participation in IAPR activities.

The school participants were offered the possibility to display a poster on their research activity and to submit a research paper to be orally presented at the special session organized during the week. The participants presented 21 posters, which were available during the entire week. Four Phd students made an oral presentation of their on-going research work:

- Image Forensics: Authentication of Digital Images, Parul Arora - India
- Recent Studies on Biometrics: Soft Traits, Forensic Recognition and Spoofing Detection Gustavo Botelho de Souza – Brazil
- Naïve Possibilistic Text Classifier, and its application in Multibiometrics, Sayyed-Ali Hossayni - Spain
- Palmprint recognition via discriminative index learning, Jan Svoboda – Switzerland

MCPR 2016

8th Mexican Conference on Pattern Recognition

<http://ccc.inaoep.mx/~mcpr2016/prev.html>



Guanajuato, Mexico

June 22-25, 2016

General Co-chairs:

[José Francisco Martínez-Trinidad](#), INAOE, Mexico

[Jesús Ariel Carrasco-Ochoa](#), INAOE, Mexico

[Víctor Ayala Semblanza Ramírez](#), University of Guanajuato, Mexico

[Jose Arturo Olivera-López](#), Benemérita Universidad Autónoma de Puebla, Mexico

[Xiaoyi Jiang](#), University of Münster, Germany

by the General Co-chairs

The 8th Mexican Conference on Pattern Recognition (MCPR2016) was held at the "Espacios Magnos" building of the University of Guanajuato (Guanajuato, Mexico). The conference was organized by the University of Guanajuato and the Computer Science Department of the National Institute for Astrophysics Optics and Electronics (INAOE). MCPR2016 was sponsored by the Mexican Association for Computer Vision, Neural Computing and Robotics (MACVNR) and the International Association for Pattern Recognition (IAPR).

MCPR2016 received contributions from 13 countries. In total 60 papers were submitted, out of which 34 were accepted for publication in the MCPR2016 proceedings and for presentation at the conference in a single track. The review process was carried out by the Scientific Committee that consisted of 72 outstanding

researchers, all of whom are specialists of pattern recognition, who prepared an excellent selection.

The 34 accepted papers were published by Springer-Verlag in the volume Pattern Recognition, LNCS 9703, edited by José Francisco Martínez-Trinidad, Jesús Ariel Carrasco-Ochoa, Víctor Ayala-Ramírez, Jose Arturo Olvera López, and Xiaoyi Jiang.

The oral sessions covered the topics: Computer Vision and Image Analysis, Pattern Recognition and Artificial Intelligent Techniques, Signal Processing and Analysis, and Applications of Pattern Recognition.

Three professors were invited to give [keynote addresses](#) and tutorials on topics in Pattern Recognition:

- Prof. Michel Devy, Laboratoire d'Analyse et d'Architecture des Systèmes, LAAS-CNRS, France. Keynote title: "Object

Recognition in Mobile Robotics".

- Prof. Theo Gevers, Informatics Institute, University of Amsterdam, The Netherlands. Keynote title: "The future of Computer Vision: From the Lab to the Real World".
- Prof. Balakrishnan Prabhakaran, Department of Computer Science, University of Texas at Dallas, USA. Keynote title: "MulSeMedia - The case of Vanishing Role Differences and Delays between Content Producers and Consumers".

The last day of the conference the invited speakers jointly with the Professor Humberto Sossa Azuela presented enlightening tutorials on several Pattern Recognition topics.

MCPR included a [Postgraduate Students' Meeting](#) for the third consecutive year that allowed to the students to receive feedback from experienced researchers, as



well as promoting their participation in conference events. Seven PhD. contributions were carefully selected to be presented at the conference as posters and these contributions were also published as a special issue of the journal Research in Computing Science edited by the National Polytechnic Institute of Mexico.

During the event, meals and the conference dinner took place at the same venue.

We are sure that MCPR 2016 once again provided a forum

for enhancing the collaboration between Mexican Pattern Recognition researchers and the broader international Pattern Recognition community.

The steering committee for the MCPR decided the 9th Mexican Conference on Pattern Recognition will be held in Huatulco, Mexico, in the last week of June 2017, organized by the Computer Science Department of the National Institute for Astrophysics Optics and Electronics and the University of Puebla.

Conference proceedings



Click on the image to go the publisher's web site for this volume.



9th Mexican Conference on Pattern Recognition

June 21-24, 2017
Huatulco, Mexico



ICVSS 2016

Sicily ~ 17 - 23 July

International Computer Vision Summer School

Directors:

[Roberto Cipolla](#), University of Cambridge, UK
[Sebastiano Battiato](#), University of Catania, Italy
[Giovanni Maria Farinella](#), University of Catania, Italy

by the Directors

The historic island of Sicily and its beautiful sunshine played host to over 160 young researchers, selected from 396 applicants for the International Computer Vision Summer School 2016. The school directors, Prof. Sebastiano Battiato and Prof. Giovanni Maria Farinella of the University of Catania and Prof. Roberto Cipolla of the University of Cambridge, chose the title "Computer Vision: What Happens next?" for the tenth edition of this highly popular annual series of lectures and tutorials. The school courses covered fundamental topics and applications in Computer Vision and Machine Learning. The school was endorsed and sponsored by IAPR and GIRPR.

The courses were delivered by world renowned experts in the field, from both academia and industry:

- Michael Black, Max Planck Institute for Intelligent Systems, Germany
- William T. Freeman, MIT, USA
- Andrej Karpathy, Stanford

University, USA

- Koray Kavukcuoglu, Google DeepMind, UK
- Yann LeCun, Facebook AI Research & NYU, USA
- Sergey Levine, UC Berkeley, University of Washington, Google, USA
- Devi Parikh, Virginia Tech, USA
- Pietro Perona, California Institute of Technology, USA
- Ashutosh Saxena, Stanford University and Cornell University, USA
- Shahram Izadi, Microsoft, USA
- Bernt Schiele, Max-Planck-Institut für Informatik, Germany
- Jamie Shotton, Microsoft Research, Cambridge, UK
- Stefano Soatto, University of California, Los Angeles, USA
- Antonio Torralba, MIT, USA

In addition to the academic programme, ICVSS 2016 had a special session, [Industry meets Student](#), to allow students to meet and learn about the opportunities and activities at the world's leading research laboratories and companies that are exploiting computer vision.

The industrial panel was composed

of:

- Facebook AI Research, USA
- Google DeepMind, USA
- Microsoft Research Cambridge, United Kingdom
- OSRAM Corporate Technology, Germany
- Qualcomm Research, Austria
- Rakuten, Japan
- Toyota Research Europe, Belgium
- Toshiba Research Europe, United Kingdom
- Xerox Research Centre Europe, France

Intended to provide a review of the existing state-of-the-art research, one of the greatest attractions of the school has been the opportunity for students at the start of their research careers to challenge and question both the professors and each other in an informal and relaxed setting, providing an inspirational atmosphere, a chance to improve research skills and foster a sense of community, though activities such as the [reading group](#), poster session, and the [essay competition](#).

Five prizes were assigned by



the school committee. The best presentation prizes (sponsored by Facebook, NVIDIA, Qualcomm and Toshiba) were given to Tayyab Naseer, (University of Freiburg - DE), Christoph Feichtenhofer (Graz University of Technology, AT and University of Oxford, GB). The winner of the essay competition (sponsored by IAPR, Microsoft Research and Osram) was Ksenia Grozdova (Kings College London - EPSRC CDT in Medical Imaging, GB).

In amongst a packed program of over 30 hours of presentations, the organizers found time for a tour of the ancient and picturesque town of Ragusa Ibla (RG) including the opportunity to experience the local traditions in the form of folk dancing and a delicious feast featuring many of the local delicacies. The school buses for the social tours, as well as for the transportation from the Catania Airport to the School Location (and vice versa) were sponsored by

IAPR for all the participants.

As students prepared for the closing ceremony and an evening party at the beach, many students expressed their desire to get back to the lab to test out new ideas and were looking forward to next year's school, which will be announced soon in December 2016.

All the information about ICVSS are available at <http://www.dmi.unict.it/icvss>.



ICVSS 2017

International Computer Vision Summer School

23rd International Conference on Pattern Recognition, ICPR 2016
December 4-8, 2016
Cancun, Mexico



The banner features a scenic view of Cancun, Mexico, with a blue sky and turquoise water. At the top, there are logos for IAPR, ICPR 2016, and the University of Mexico. The main text reads "See you in Cancun! Registration is open!" in large, bold, yellow-outlined letters. Below this, a URL is provided: <http://www.icpr2016.org/site/tickets/>. At the bottom, there are logos for sponsors including "can eun", "MÉXICO", and "CONACYT".

SPEAKERS

Plenary Lecture Prizes:

K.S. Fu Prize winner – [Prof. Robert Haralick](#), City University of New York

J. K. Aggarwal Prize winner – [Prof. Fei Fei Li](#), Stanford University

Maria Petrou Prize winner – [Michal Irani](#), Weizmann Institute of Science

Invited Speakers Lectures

[Ricardo Baeza-Yates](#), Track 1 – (Pattern Recognition and Machine Learning)

[Marc Pollefeys](#), Track 2 – (Computer Vision)

[Wolfgang Förstner](#), Track 3 – (Image, Speech, Signal and Video Processing)

[Josien Pluim](#), Track 5 – (Biomedical Image Analysis and Applications)



NEW AT ICPR 2016:

Coffee Break for Women at ICPR

Tuesday, December 6 at 10:00 am following the Maria Petrou Prize Plenary Lecture

BOOKSBOOKSBOOKS

FREE BOOKS

The *IAPR Newsletter* is looking for reviewers for the books listed below. If you have interest and some knowledge in the topic, email us with your mailing address. We will send you a copy of the book—which you may keep—and will expect in return a review for the Newsletter. ~[Zeeshan Zia](#), Associate Editor for Book Reviews

We are offering the following titles for review.

These have been published in the "Advances in Computer Vision and Pattern Recognition" series from Springer.

- * *Knowledge Transfer between Computer Vision and Text Mining* by Radu Tudor Ionescu: <http://www.springer.com/us/book/9783319303659> (published in 2016)
- * *Context-Enhanced Information Fusion* by Lauro Snidaro et al.: <http://www.springer.com/us/book/9783319289694> (published in 2016)
- * *Large-Scale Visual Geo-Localization* by Amit R. Zamir et al.: <http://www.springer.com/us/book/9783319257792> (published in 2016)
- * *Structural Pattern Recognition with Graph Edit Distance* by Kaspar Riesen: <http://www.springer.com/us/book/9783319272511> (published in 2015)
- * *Integrated Imaging and Vision Techniques for Industrial Inspection* by Zheng Liu et al. (Eds.): <http://www.springer.com/us/book/9781447167402> (published in 2015)
- * *Sparse Representation, Modeling and Learning in Visual Recognition* by Hong Cheng: <http://www.springer.com/us/book/9781447167136> (published in 2015)

Other recently published Springer titles include:

- * *Handbook of Iris Recognition (Second Edition)* by Kevin W. Bowyer: <http://www.springer.com/us/book/9781447167822> (published in 2016)
- * *Digital Image Processing (Second Edition)* by Wilhelm Burger and Mark J. Burge: <http://www.springer.com/us/book/9781447166832> (published in 2016)
- * *Guide to Signals and Patterns in Image Processing* by Apurba Das: <http://www.springer.com/us/book/9783319141718> (published in 2015)
- * *Practical Biometrics (Second edition)* by Julian Ashbourn: <http://www.springer.com/us/book/9781447167167> (published in 2015)
- * *Computer Vision for X-Ray Testing* by Domingo Mery: <http://www.springer.com/us/book/9783319207469> (published in 2015)





This bulletin board
contains items of interest to the
IAPR Community



NEW AT ICPR 2016:

Coffee Break for Women at ICPR

Tuesday, December 6 at 10:00 am

Let's talk! There is a steadily growing number of female researchers in our field who have much to learn from each other.

The first ever Coffee Break for Women at ICPR will follow the Maria Petrou Prize lecture on Tuesday, December 6, at 10:00 am. Please come and meet colleagues from around the world, make new friends, and share your personal stories about women working in various fields of pattern recognition.

The IAPR Executive Committee hopes that this event will foster new connections! All female attendees at ICPR, graduate students as well as and junior and senior researchers, are invited.

-The IAPR Executive Committee



Click on links below so you
don't miss these important items in
this issue:

[Register for ICPR!](#)

Get
[FREE BOOKS!!!](#)

[Calls from IAPR Committees](#)

Meeting and Education Planner

The IAPR web site has the most up-to-date information on IAPR events. Click [here](#).

NOTE: Highlighting indicates that the paper submission deadline has not yet passed.

* Asterisks denote non-IAPR events *

	Meeting	Report on previous edition	Venue
OCT	ICFHR 2016 : 15th Intl. Conference on Frontiers in Handwriting Recognition	ICFHR 2014	China
	RFMI 2016 : Sixth International Workshop on Representation, analysis and recognition of shape and motion From Imaging data		Tunisia
NOV	CIARP 2016 : 21st Iberoamerican Congress on Pattern Recognition		Peru
	IVCNZ 2016 : Image and Vision Computing New Zealand 2016	IVCNZ 2015	New Zealand
	MedPRAI 2016 : The Mediterranean Conference on Pattern Recognition and Artificial Intelligence		Algeria
	S+SSPR 2016 : IAPR Joint International Workshops on Statistical Techniques in Pattern Recognition (SPR 2016) and Structural and Syntactic Pattern Recognition (SSPR 2016)	S+SSPR 2014	Mexico
	DICTA 2016 : 2016 Digital Image Computing, Techniques and Applications	DICTA 2015	Australia
	IWPRHA 2016 : 3rd Intl. Workshop on Pattern Rec. for Healthcare Analytics (in conjunction with ICPR 2016)		Mexico
	* MRPRSS 2016 : 4th Intl. Workshop on Multimodal pattern recognition of social signals in human computer interaction * (in conjunction with ICPR 2016)		Mexico
	* VAIB 2016 : Visual observation and analysis of Vertebrate And Insect Behavior 2016 * (in conjunction with ICPR 2016)	VAIB 2014	Mexico
	PRRS 2016 : 9th International Workshop on Pattern Recognition in Remote Sensing (in conjunction with ICPR 2016)	PRRS 2014	Mexico
	MANPU 2016 : The First International Workshop on coMics ANalysis, Processing and Understanding (in conjunction with ICPR 2016)		Mexico
* UHA3DS'16 : 2nd International Workshop on Understanding Human Activities through 3D Sensors * (in conjunction with ICPR 2016)		Mexico	
* FFER 2016 : 2nd International Workshop on Face and Facial Expression Recognition from Real World Videos * (in conjunction with ICPR 2016)	FFER 2014	Mexico	
* DLPR 2016 : 1st International Workshop on Deep Learning for pattern Recognition * (in conjunction with ICPR 2016)		Mexico	
* CVAUI 2016 : 2nd Workshop on Computer Vision for Analysis of Underwater Imagery * (in conjunction with ICPR 2016)	CVAUI 2014	Mexico	
RRPR 2016 : 1st Workshop on Reproducible Research in Pattern Recognition (in conjunction with ICPR 2016)		Mexico	
* IWCF 2016 : 7th International Workshop on Computational Forensics (in conjunction with ICPR 2016)	IWCF 2014	Mexico	
* VAAM 2016 : 3rd Video Analytics for Audience Measurement * (in conjunction with ICPR 2016)			
* MMIS 2016 : Workshop on Mathematical Models for Image Sciences * (in conjunction with ICPR 2016)		Mexico	
DEC	ICPR 2016 : 23rd International Conference on Pattern Recognition	ICPR 2014	Mexico

Meeting and Education Planner

The IAPR web site has the most up-to-date information on IAPR events. Click [here](#).

NOTE: Highlighting indicates that the paper submission deadline has not yet passed.

* Asterisks denote non-IAPR events *

		Meeting	Report on previous edition	Venue
2017	FEB	ICPRAM 2017 : 6th International Conference on Pattern Recognition Applications and Methods		Portugal
	APR	ASAR 2017 : First International Workshop on Arabic Script Analysis and Recognition		France
	MAY	MVA 2017 : 15th IAPR Intl. Conf. on Machine Vision Applications	MVA 2015	Japan
		GbR 2017 : 11th IAPR-TC15 Workshop on Graph-based Representations	GbR 2015	Italy
	JUN	SCIA 2017 : 20th Scandinavian Conference on Image Analysis	SCIA 2015	Norway
	AUG	* CAIP 2017 : 17th International Conference on Computer Analysis of Images and Patterns *		Sweden
		ICDAR 2017 : 14th International Conference on Document Analysis and Recognition		Japan
	NOV	PSIVT 2017 : 8th Pacific Rim Symposium on Image and Video Technology	PSIVT 2015	China

23RD INTERNATIONAL CONFERENCE ON
PATTERN RECOGNITION
4 - 8 DEC 2016 CANGÚN, MÉXICO
REGISTRATION IS OPEN!!!

The IAPR Newsletter is published in association with the IAPR website, www.iapr.org
The IAPR Newsletter is published four times per year, January, April, July, and October.



Deadline for the next issue: September 19, 2016

To contact us:

Arjan Kuijper, Editor-in-Chief, arjan.kuijper@igd.fraunhofer.de
Zeeshan Zia, Associate Editor for Book Reviews, zeeshan@nec-labs.com
Linda J. O'Gorman, Layout Editor, secretariat@iapr.org