

IAPR
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Newsletter

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From the Desk of the Associate Editor for Book Reviews: Please allow me to introduce myself...

by Owais Mehmood

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<http://www.owaismehmood.com/>

As the new Associate Editor for Book Reviews, I owe the readers of the *IAPR Newsletter* a concise introduction.

I am currently a Research Fellow at the Institute for Artificial Intelligence and Biological Systems at the [University of Leeds](#) where I apply computer vision and machine learning techniques to intelligent transportation. In collaboration with various European partners, we have developed a decision support system for tunnel inspection and maintenance. This system is currently being used and tested at the French National Railways ([SNCF](#)). I also collaborate in the development of a real-time, big data visualization and processing system for the railway and tunnelling industry.

Before Leeds, I obtained my PhD in Computer Vision from [Ecole Centrale de Lille](#) in France. I explored the problem of multi-camera people detection and, to this end, explored 3D geometric primitives in a convolutional



frame for improved detection and localization. This work involved significant input from the [French Institute of Transportation](#) and the [University of Pierre and Marie](#) in Paris.

My journey in vision began with my Master's degree. I obtained the Master's degrees specializing in Computer Vision under the European framework, studying at the [Norwegian University of Science and Technology](#), the [Jean-Monnet University](#) in France, and the [University of Granada](#) in Spain. During my Master's studies, I did

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/

[PReMI 2017](#)

7th International Conference on Pattern Recognition and Machine Intelligence
Kolkata, India
Deadline: May 2, 2017
Dates: Dec. 5-8, 2017

[ICIG 2017](#)

The 9th International Conference on Image and Graphics
Shanghai, China
Deadline: May 15, 2017
Dates: Sep. 14-15, 2017

[CIARP 2017](#)

22nd Iberoamerican Congress on Pattern Recognition
Valparaíso, Chile
Deadline: May 21, 2017
Dates: Nov. 7-10, 2017

[ACPR 2017](#)

The 4th Asian Conference on Pattern Recognition
Nanjing, China
Deadline: Jun 5, 2017
Dates: Nov. 26-29, 2017

[DICTA 2017](#)

2017 International Conference on Digital Image Computing: Techniques & Applications
Sydney, Australia
Deadline: Jul. 9, 2017
Dates: Sep. 19-21 2017

[PSIVT 2017](#)

8th Pacific Rim Symposium on Image Analysis and Video Technology
Wuhan, China
Deadline: Jul. 14, 2017
Dates: Nov. 20-24, 2017

[DAS 2018](#)

13th IAPR International Workshop on Document Analysis Systems
Vienna, Austria
Deadline: Nov. 20, 2017
Dates: Apr. 24-27, 2018

[ICB 2018](#)

The 11th International Conference on Biometrics
Gold Coast, Queensland, Australia
Deadline: December 15, 2017
Dates: Feb. 20-23, 2018

[MedPRAI 2018](#)

The Second Mediterranean Conference on Pattern Recognition and Artificial Intelligence
Rabat, Morocco
Deadline: Sep. 2, 2017
Dates: Mar. 27-28, 2018

an internship at [ParisTech](#) where I developed tools for automated, semi-automated, and manual feature annotations in multi-view camera images. I have also done a research internship with the Computer Vision and Advanced Development Labs at [Xerox Research Centre Europe](#) where I explored RGB-D classification using Microsoft Kinect.

Why BooksBooksBooks?

Like various other aspects of human society, research and

development requires efficient communication to nourish and to prosper. It is critical that newly developed and tested ideas be disseminated to targeted audiences and, where possible, to the wider, general audience. Conferences and journals provide one tool where a relatively limited number of pages and a faster pace of dissemination occurs.

Books have the freedom to explore ideas in depth; possibly presenting or summarising complete domains

and fields; presenting things that have withstood the test of time and perhaps even presenting things in their historical contexts. This is also valuable to the new generation: young researchers and students pursuing undergraduate and postgraduate degrees.

I always find it helpful to read reviews or summaries of a book before deciding to read it or whether to buy it. With mountains of knowledge around us, we are living in an information-overload

age. Deciding what to read and, more critically, what not to read becomes a bit easier if your friends or colleagues recommend or review it. (I use this strategy for non-technical literature as well.)

The *IAPR Newsletter* provides one place to find reviews of the latest technical literature. I have been a contributing reviewer to the *IAPR*

Newsletter ([July 2013](#)), and look forward now to contributing to the book reviews process. I hope to coordinate reviews of books on topics of interest to you—yes, *you*—our readers.

Please feel free to [contact me](#) about what topics you want to see covered and which books you'd like to see reviewed. And, most

importantly, please contribute your reviews of books that are relevant to the IAPR Community, either something that has recently landed on your desk or one of the FREE BOOKS from the list below.

Looking forward to hearing from you!

Owais

o.m.mehmood@leeds.ac.uk

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*. ~[Owais Mehmood](#), Associate Editor for Book Reviews

We are offering the following titles for review.

The most recent titles published in Springer's "Advances in Computer Vision and Pattern Recognition" series are:

- * *Algorithmic Advances in Riemannian Geometry and Applications* by Hà Quang Minh et al. (Eds.): <http://www.springer.com/book/9783319450254>
- * *Guide to 3D Vision Computation* by Kenichi Kanatani et al.: <http://www.springer.com/book/9783319484921>
- * *Handbook of Biometrics for Forensic Science* by Massimo Tistarelli et al. (Eds.): <http://www.springer.com/book/9783319506715>

Furthermore, the next titles due to publish in the series are:

- * *Visual Attributes* by Rogerio Schmidt Feris et al. (Eds.): <http://www.springer.com/book/9783319500751> (due next month)
- * *Guide to Medical Image Analysis (Second edition)* by Klaus D. Toennies: <http://www.springer.com/book/9781447173182> (due next month)
- * *Deep Learning and Convolutional Neural Networks for Medical Image Computing* by Le Lu et al. (Eds.): <http://www.springer.com/book/9783319429984> (due in June)

Other titles of interest are:



- * *Statistical Analysis of Noise in MRI* by Santiago Aja-Fernández et al.: <http://www.springer.com/book/9783319399331>
- * *Support Vector Machines and Perceptrons* by M.N. Murty et al.: <http://www.springer.com/book/9783319410623>
- * *Efficient Biometric Indexing and Retrieval Techniques for Large-Scale Systems* by Ilaiah Kavati et al.: <http://www.springer.com/book/9783319576596> (forthcoming)
- * *Guide to Convolutional Neural Networks* by Hamed Habibi Aghdam et al.: <http://www.springer.com/book/9783319575490> (forthcoming)

Calls from IAPR Committees

**From the IAPR
Executive Committee
(ExCo):**

Call for Proposals for "Summer" Schools

**Deadline: June 1, 2017
(for schools planned for
August - November 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 Treasurer Apostolos Antonacopoulos by email (a.antonacopoulos@primaresearch.org). 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...Mário Figueiredo, IAPR Fellow

Selection and Grouping of Correlated Features (S+SSPR 2016 Pierre Devijver Award Lecture)



Mário A. T. Figueiredo, IAPR Fellow

ICPR 2008, Tampa

*For contributions to unsupervised and supervised learning,
image analysis, and wavelet-based image restoration*

Mário A. T. Figueiredo received a PhD in electrical and computer engineering, from Instituto Superior Técnico (IST), the engineering school of the University of Lisbon, in 1994. He has been with the faculty of the Department of Electrical and Computer Engineering, IST, since 1994, where he is now a Professor. He is also area coordinator and group leader at Instituto de Telecomunicações, a private non-profit research institute. His research interests include image processing and analysis, machine learning, and optimization.

M. Figueiredo is a Fellow of the IEEE and of the IAPR and is included in the 2014, 2015, and 2016 editions of the Thomson Reuters' Highly Cited Researchers lists. He has received several awards, namely the 2011 IEEE Signal Processing Society Best Paper Award, the 2014 IEEE W. R. G. Baker Award, the 2016 EURASIP Individual Technical Achievement Award, and the 2016 IAPR Pierre Devijver Award.

Editor's note:

Mário Figueiredo was the winner of the 2016 [Pierre Devijver Award](#) at S+SSPR 2016 (see [report](#) in this issue). For this feature article, we asked Prof. Figueiredo to explain his Devijver Award Lecture for a general audience.

The slides for this lecture can be found here: http://www.iapr.org/docs/Figueiredo_S+SSPR_2016_DevijverAward.pdf.

~ Arjan Kuijper, Editor-in-Chief

by Mário A. T. Figueiredo, Instituto de Telecomunicações and Instituto Superior Técnico, University of Lisbon, Portugal

Linear regression is one of the fundamental tools in statistical data analysis and machine learning: its goal is to learn (from training data) a model that allows predicting the value of a (response) variable as a linear combination of a collection of other variables (called independent or explanatory variables, or covariates). The classical criterion for linear regression consists in seeking the weights of this linear combination that minimize the sum of the squares of the errors between the predicted values and those given in the training set (the ubiquitous least squares criterion). Other criteria are also often used, such as the absolute error (which is robust with respect to spurious data) or the logistic loss (when the variable being predicted is a probability, for example, of a class label).

One of the central problems in linear regression (especially in scenarios where the number of

covariates is very high) is the selection of a subset of variables that is relevant for the problem in hand. This is an important task for several reasons, namely: a predictor with a reduced number of variables is computationally lighter; predictors with fewer variables tend to generalize better, i.e., are less prone to over-fitting; the identification of the relevant variables is often meaningful (e.g., corresponds to identifying which genes are relevant to predict a certain disease).

In the past two decades, variable selection based on sparsity-inducing regularizers has become the dominant paradigm. In this type of approach, the variable weights are estimated by minimizing the sum of the squared error loss (or some other loss) with a function (the so-called regularizer) that gives preference to sparse sets of weight, i.e., such that several (maybe many) weights are exactly zero. These null weights correspond to variables that are

deemed irrelevant for predicting the response variable. Among sparsity-inducing regularizers, the most famous is the LASSO (least absolute shrinkage and selection operator), which corresponds to the sum of the absolute values of the weights, and has been the object of intense study, as well as of many generalizations and extensions.

In high-dimensional linear regression problems (with a large number of variables, relatively to the number of samples in the training set), it is natural to have highly correlated variables. For example, in gene expression data, it is often the case that several genes are strongly correlated (co-regulated) and simultaneously relevant as predictors of some disease. In this case, variable selection based on standard sparsity-inducing regularization is known to fail: it tends to select an arbitrary subset of these correlated variables and is unstable (the set of selected variables may change

drastically, with only small changes in the data). However, in many applications (namely, of a scientific nature), it is often desirable to identify all of the relevant variables (for interpretability purposes), rather than an arbitrary subset thereof. To achieve this goal, several approaches have been proposed, with the best known being the so-called elastic net.

In this [talk](#), after reviewing several methods to handle linear regression problems with highly correlated variables, I focus on a recent proposal, called ordered weighted l1 (OWL). The key feature of this method is that it is able to explicitly identify sufficiently correlated features, without the need to explicitly compute these correlations. In addition to an intuitive explanation for the behavior of OWL, the talk included several theoretical results about this regularizer, and some experimental illustrations of its behavior.

IAPR Then and Now...

18 Years Ago, *IAPR Newsletter* Vol. 21 No. 2, Spring 1999

A New Award

A new award has been created in honour of the memory of the former IAPR President Pierre Devijver, who passed away in December 1996. After discussions in the ExCo and with the chairman and other members of the Technical Committee TCI (Statistical Pattern Recognition Techniques), it was decided to link the award to this Technical Committee, since Pierre had been predominantly active in the area of Statistical Pattern Recognition. TCI has a well established custom of organising a workshop biennially in conjunction with the ICPR. At this workshop it has been customary to

invite a distinguished speaker. The lecture given by the invited speaker will be called the "Pierre Devijver Lecture" and the invited speaker will receive the "Pierre Devijver Award". A symbolic cash sum will be associated with the award. The selection of the lecturer, the responsibility of TCI, will be regarded as a great honour.

Once the terms for the award have been established, appropriate guidelines will be formulated. The institution of the Award was announced by Pavel Pudil, chairman of TCI at the "Pierre Dwijver Symposium", held in Brussels on February 12.

Previous recipients of the Pierre Devijver Award:

- 2000: Josef Kittler
- 2002: Anil K. Jain
- 2004: Erkki Oja
- 2006: Robert P. W. Duin
- 2008: Tin Kam Ho
- 2010: Luc Devroye
- 2012: George Nagy

Titles of (and some links to) the award lectures can be found at the IAPR website. Click on the link below.

http://www.iapr.org/fellowsandawards/awards_devijver.php

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?*
- *In more detail: What technical work have you done, and what is/are your current research interest(s)?*
- *And lastly: How can the IAPR help young researchers?*

~Arjan Kuijper, Editor -in-Chief

Ghada Zamzmi



Ghada Zamzmi is currently a doctoral student at the University of South Florida (USF) in the Department of Computer Science and Engineering. Her research emphasis is on emotion recognition, in particular, pain recognition for infants and individuals with communicative/neurological impairments.

Her research has been published in the proceedings of different pattern recognition conferences, such as the International Conference on Automatic Face and Gesture (FG2015), the International Conference on Pattern Recognition (ICPR2016), and the Scandinavian Conference on Image Analysis (SCIA2017), and in clinical meetings, such as the Pediatric Academic Societies Meeting.

She also received the best poster award in the Annual College of Engineering Research Day 2016 at USF.

Ghada received the M.S. degree from the school of Computer Science and Engineering at USF in 2014.

by [Ghada Zamzmi](#), University of South Florida, USA

Briefly: How did you get involved in pattern recognition?

It is a combination of several reasons.

As a child, I was inquisitive and interested in organizing things into groups to examine their characteristics and understand how they worked. Legos® and jigsaw puzzles were my favorite games back then, and they still

Editor's note:

The collaboration that is discussed in this feature between USF engineers and the staff in the Neonatal Intensive Care Unit (NICU)—using computer vision technology to detect, measure, and help caregivers minimize pain felt by newborns—was recently reported at the University of South Florida's USF Health website <https://hscweb3.hsc.usf.edu/blog/2017/03/24/medicine-engineering-researchers-use-facial-expression-software-help-measure-pain-felt-newborns/> and was part of Fox News report <https://www.youtube.com/watch?v=UnMcNnIdawE&feature=youtu.be>.

~ Arjan Kuijper, IAPR Newsletter EiC

are. In school, math and science were always the most interesting classes for me.

Throughout the years, I developed a strong interest in science and technology that motivated me to study computer science at the college level. I strongly believe that science and technology are highly connected, that they feed off one another, propelling each other forward. In college, I acquired a decent knowledge of computer hardware, software, languages, algorithms, and mathematical models, based on projects I did and courses I took.

After graduating, I started the master's program; however, I had no plan to pursue a doctoral degree until I took a computer vision course with Professor Rangachar Kasturi. The course was an eye-opener. I was fascinated by the fact that computers can learn to see and analyze images as humans do through pattern analysis and by the numerous real-life applications. That course introduced me to the vision world and allowed me to work on a variety of interesting projects. For example, one of the most enjoyable projects was about solving jigsaw puzzles using a computer. I spent weeks indulging my childhood curiosity and investigating different kinds of features, such as shape and color, for solving jigsaw puzzles. That project along with some others sparked my interest in the field and led me to study relevant courses, such as Signal Processing, Data Mining, Machine Learning, and Pattern Recognition. These courses allowed me to expand my knowledge about pattern recognition and to experience graduate education and research.

It was at that time when I made the decision to pursue a doctoral degree in Computer Vision and Pattern Recognition and join the Computer Vision and

Pattern Recognition (CVPR) research group led by Professors Rangachar Kasturi, Dmitry Goldgof, and Sudeep Sarkar at the University of South Florida. I wanted to satisfy my desire to know more and to enrich my knowledge about this field.



Prof. Kasturi and Ghada Zamzmi

I was extremely excited to start my first research project, which was about suppressing facial expressions in low-resolution videos for the purpose of improving face recognition. The developed algorithm for facial expression suppression depends on measuring the strain magnitude for each pixel in each frame and then replaces the high strain values with low strain values from a reference frame. The algorithm was able to perform well when evaluated in both posed and in-the-wild datasets.

After the completion of this project, I moved on to emotion recognition research and focused mainly on the automatic analysis and recognition of emotions for vulnerable populations like infants.

What technical work have you done, and what is/are your current research interest(s)?

Emotion recognition can be defined as the process of automatically classifying humans' emotional states based on analysis of input data (e.g., facial expression). It is an emerging area of research due to the demand for its application in healthcare, education, deception detection, website customization,

and gaming. Although the current efforts for the automatic analysis of emotions are promising, many research issues are still open and require more investigation. Existing methods focus on analyzing a single input (e.g., facial expression or crying sound or vital signs) for recognizing emotions. These methods are also context insensitive, and studies in cognitive science have reported the importance of contextual information for understanding human emotions. Another issue is that the majority of the existing methods were developed to recognize emotions of cooperative subjects in a research or lab environment. Emotion recognition becomes more challenging when applied to detecting emotions of uncooperative subjects in real-world environments where noise, severe occlusion, extreme pose, and low light and resolution are common.

My research focuses mainly on analyzing and recognizing pain emotion for premature infants (i.e., uncooperative subjects) in the Neonatal Intensive Care Unit (NICU) to improve the current practice of pain assessment. The current standard for assessing infants' pain in NICU has several limitations that need to be addressed. For example, regardless of the amount of training and skill, the observation and interpretation of pain by different caregivers will vary. Another limitation is that caregivers are only able to assess pain intermittently, which may lead to missing experiences of pain that occur when the infants are not being observed. Pediatric research has found that the inadequate treatment of pain, due to poor assessment, can cause permanent alterations to the brain structure and function. Therefore, it is crucial to develop continuous,

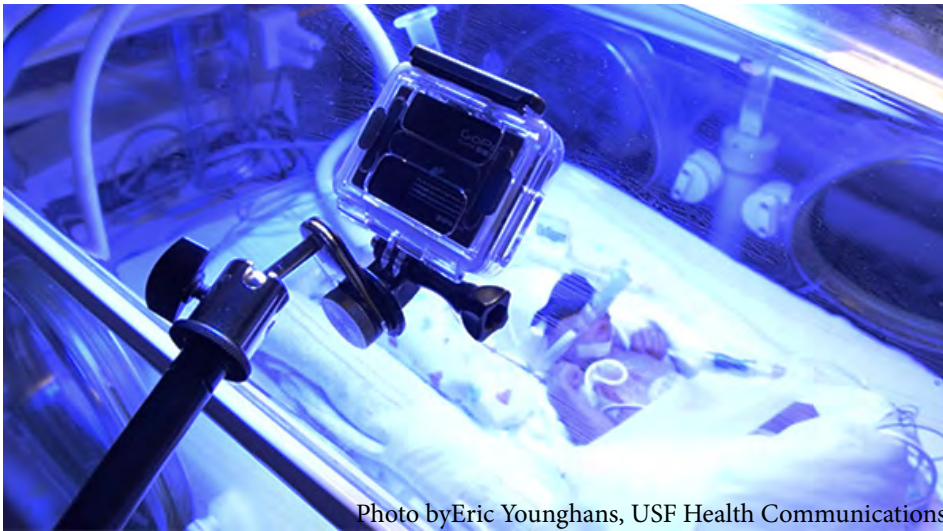


Photo by Eric Younghans, USF Health Communications

Cameras continually monitor the newborns at Tampa General Hospital's NICU

reliable, and more consistent pain assessment to guide treatment. An automated pain recognition system can alleviate the observer's subjectivity and provide round-the-clock monitoring.

To build an automated pain recognition system, I'm working with an interdisciplinary research team that includes professors from Computer Science and Engineering, Pediatrics, and Psychology. We are developing the system using real-world data collected from premature infants in the NICU at Tampa General Hospital. The collected data include facial expression, crying sound, body movement, vital signs, and cerebral oxygenation readings. Collecting multiple pain modalities allows us to build a multimodal system that still has the ability to assess pain even in the case of missing data, a situation known to be common in clinical environments.

In the preliminary stage, we analyzed the collected data (i.e., facial expression, crying sound, body movement, and vital signs) using signal-processing methods to extract pain-relevant features and applying pattern recognition methods on the extracted features to classify the infants' emotional states as no pain,

moderate pain, or severe pain. These preliminary results were published in the proceedings of the 23rd International Conference on Pattern Recognition (ICPR 2016) and the 20th Scandinavian Conference on Image Analysis (SCIA 2017).

Recent clinical studies reported the strong association between infants' pain emotion and changes in cerebral oxygenation. We are currently investigating this correlation in premature and newborn infants who experience acute and chronic pain. We are also working on integrating the clinical data, such as the infant's gestational age and gender, and the contextual information to develop a context-sensitive assessment system

Along with infants' pain recognition, I am interested in analyzing infants' emotions such as hunger and fear for the purpose of improving infant-mother interactions at home. I am also interested in the automatic assessment and diagnosis (i.e., early diagnosis based on behaviors analysis) for people with communication impairments such as autism, dementia, and Alzheimer's, as well as the multimodal analysis of human behaviors.

How can the IAPR help young researchers?

Along with curiosity, creativity, and passion, young researchers need inspiration and motivation. These can push you forward in positive directions. I believe organizations like the IAPR do a great job of inspiring beginners in the field by exposing them to others with similar research experience and giving them a chance to share their own experiences and seek advice. The IAPR Newsletter is a good source for people who are seeking research advice from senior researchers and looking for mentors or colleagues to work with.

Young researchers want their ideas and works to get acknowledged and recognized. They need to widen their knowledge and awareness about their area of research and participate in intellectual discussions. By supporting conferences, workshops and summer schools, the IAPR gives young researchers great opportunities to spread their ideas and present their works to the research community. It introduces them to the cutting-edge research in the pattern recognition field and allows them to participate in scientific meetings. In addition, conferences increase the researchers' awareness about new trends in research and introduce them to new ideas and approaches to tackle new challenges. I believe that conferences and workshops are the best place to mingle, communicate with other researchers, and build good networks that might lead to cooperation. This cooperation among different researchers and practitioners can stimulate creativity and accelerate technical and scientific progress.

BENCHMARK DATASETS

Editor's note:

Benchmark datasets have become more and more important in pattern recognition in order to evaluate new algorithms against state of the art. With the receipt of the email below, the IAPR Newsletter begins a new feature on Benchmark Datasets. Your contributions are welcome.

Send the link.

Describe the contents.

Include a contact person.

And, we'll feature your dataset in this series.

~ Arjan Kuijper, IAPR Newsletter EiC
arjan.kuijper@igd.fraunhofer.de



Dear Professor Kuijper,

I'm e-mailing about the IAPR newsletter - and a public database of that your readers might be interested in:

We recently released the Southampton-York Natural Scenes (SYNS) dataset (<https://syms.soton.ac.uk>). This public dataset includes >90 scenes, surveyed at randomly selected locations within 25 diverse indoor and outdoor scene categories. Each survey includes

- 1. spherical LiDAR range data*
- 2. high-dynamic range spherical imagery and*
- 3. a panorama of stereo image pairs.*

The database is described in the accompanying Scientific Reports paper: Adams WJ, Elder JH, Graf EW, Leyland J, Lugtigheid AJ & Murry A. (2016). The Southampton-York Natural Scenes (SYNS) dataset: Statistics of surface attitude (2016) Scientific Reports, 6, 35805.

<http://www.nature.com/articles/srep35805>

Would you be able to feature the database in your newsletter?

Many thanks,

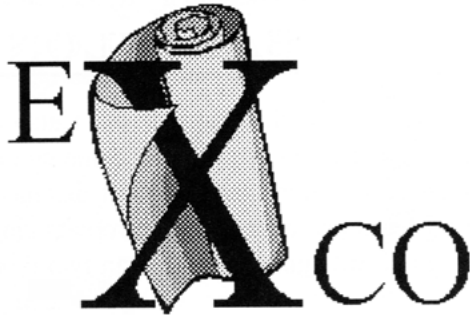
Wendy Adams

*Professor of Experimental Psychology
University of Southampton*

<http://www.southampton.ac.uk/psychology/about/staff/wendya.page>

From the

News from the Executive Committee of the IAPR



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



Appeal for Donations: Maria Petrou Prize Fund

The Maria Petrou Prize honors the memory of Professor Maria Petrou as an outstanding scientist and engineer and as a very successful pioneer and role model for women. She is widely recognized for her extensive contributions to the field of image processing and pattern recognition and also made significant contributions to the growth of the International Association for Pattern Recognition (IAPR). The Prize consists of a suitably inscribed plaque and a cash amount.

The IAPR wishes to establish a special endowment account to help support the Maria Petrou Prize. This account would be set up with a combination of funds from the IAPR and donations from individuals, institutions, and companies.

Please consider making a donation to the Maria Petrou Prize Fund. Contact IAPR Secretariat Linda O'Gorman, secretariat@iapr.org, for more information.

The IAPR is a U.S. non-profit (501c3) organization.

Victoria, April 5, 2017

It is finally Spring in the Northern Hemisphere! Our campus looks a bit deserted, with students stressing out and studying for their finals, while faculty and teaching assistants busy themselves with creating, invigilating, and marking these exams. I just hope everyone finds a few moments to enjoy the color bursts and subtle fragrances of cherry trees and magnolias, which are in bloom all around our campus.



Spring time is also best for planning for the academic activities that will take place over the summer. The IAPR Executive Committee has started preparations for its interim meeting, which will be held at the end of August in Uppsala, Sweden. The composition of the IAPR Standing Committees is currently being finalized, so that they can start working on their assigned tasks. All Standing and Technical Committees will be reporting to the ExCo before the interim meeting.

The ExCo is keenly interested in gathering feedback and proposals on how to improve the format, scientific quality, and the overall experience of attending its premier conference, the International Conference on Pattern Recognition (ICPR). IAPR Governing Board (GB) members will very soon be invited to complete a survey of their experiences related to ICPR 2016 (December 4-8) and to the 2016 GB Meeting (December 6) in Cancun, Mexico.

The ExCo would also like to hear from both junior and senior members of all IAPR national societies! If you attended ICR 2016, please complete this survey <https://goo.gl/forms/oqksqjEuEGUYoieo2>. I'll forward the responses to the ICPR Liaison Committee, whose main task is to ensure the high quality and scientific relevance of the ICPRs. For the same purpose, the feedback related to the GB Meeting will be thoroughly considered for improving the planning and organization of the next GB Meeting, which will take place in August 2018 in Beijing, China.

Along with its many regular features, this issue of the *IAPR Newsletter* has [reports](#) from our two newest IAPR member societies, the Pakistani Pattern Recognition Society and the Vietnamese Association for Pattern Recognition.

I hope that you will enjoy reading the Spring issue of our newsletter!

Did you attend



Let us know
what you thought!

Click on this link for a survey
<https://goo.gl/forms/oqksqjEuEGUYoieo2>



INSIDE the IAPR

The IAPR Welcomes Two New Societies



The Pakistani Pattern Recognition Society

Since its inception in late 2015, the Pakistani Pattern Recognition Society (PPRS - <http://pprs.org.pk/>) has been very active in organizing events like workshops and symposia to bring all the researchers of the field together to one platform.

In December 2015, the First International Workshop on Pattern Recognition Applications was organized in Islamabad, Pakistan (<http://iwpra15.seecs.nust.edu.pk/>). The main objective was to introduce PPRS to a larger community of researchers by bringing together the experts of the field and having very interesting talks on the state-of-the-art research being done in this domain. The highlight of the event was the presence of Prof. Dr. Andreas Dengel (Fellow IAPR) who was instrumental in encouraging future researchers to take up the challenges of Pattern Recognition. Membership of PPRS was opened which received an overwhelming response from researchers across the country.

The 2nd International Workshop on Pattern Recognition Applications (<http://iwpra.kics.edu.pk/2016/>) was then organized in Lahore, Pakistan and was co-located with the 6th International Conference on Language and Technology.

PPRS further organized the First Student Symposium on Document Image Analysis in Islamabad, Pakistan in December 2016 (<http://pprs.org.pk/ssdia16/>).



The Vietnamese Association for Pattern Recognition

Vietnamese Association for Pattern Recognition (VAPR - <https://sites.google.com/site/vaprgroup/>) was founded in March 2015 with the aim of promoting research and applications in pattern recognition, machine learning, data mining, image and video processing, computer vision, natural language processing, speech recognition, and related fields in Vietnam. We would like to provide a forum for researchers, practitioners and experts to share their research findings, consolidate potential collaborations, and advance ongoing research dedicated to related areas. Currently, VAPR has 40 members coming from different research institutes and universities in Vietnam. VAPR members have research connection and collaboration with researchers and research institutions internationally. We welcome more collaboration and contribution from international researchers and industrial sectors.

During the first two years, VAPR has successfully organized two PR4MCA (Pattern Recognition for Multimedia Content Analysis) workshops in conjunction with the International Conference on Knowledge and System Engineering (KSE) in 2015 (<http://kse2015.uit.edu.vn/>) and 2016 (<http://fit.mta.edu.vn/kse2016/default.aspx>). Participants at the workshops were honored to welcome and receive talks from two famous researchers in pattern recognition and multimedia analysis: Prof. Jean-Marc Ogier from La Rochelle University, France at



The Pakistani Pattern Recognition Society (continued)

Membership of PPRS was approved on December 6, 2016, at the Governing Board meeting held in Cancun in conjunction with ICPR 2016.

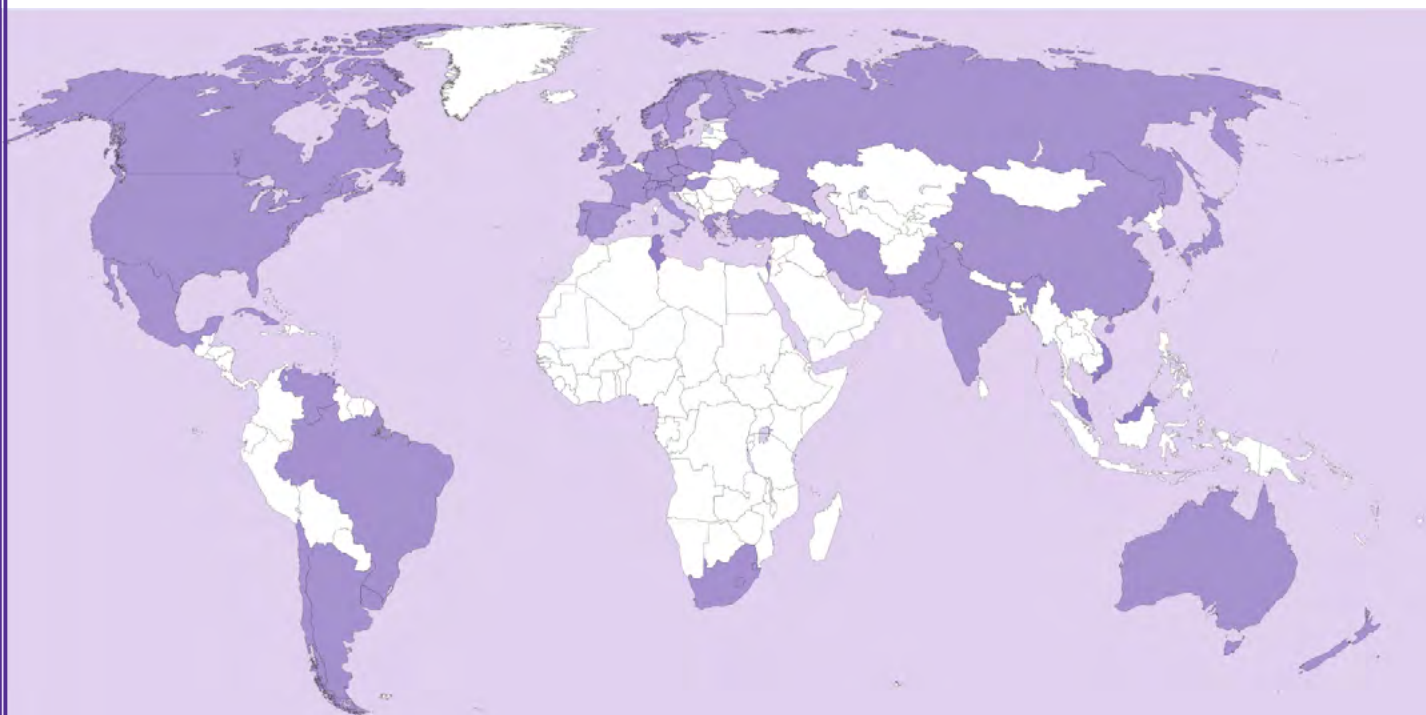


The Vietnamese Association for Pattern Recognition (continued)

PR4MCA 2015 and Prof. Yasushi Yagi from Osaka University, Japan at PR4MCA 2016. Thanks to VAPR, a network of researchers and PhD students in Vietnam and from abroad working on pattern recognition and multimedia analysis has been built.

In 2017, with the success of the two PR4MCA workshops, VAPR plans to continue to organize the 3rd PR4MCA workshop in Hue, the ancient capital of Vietnam. A summer school in pattern recognition, multimedia analysis and computer vision is also planned to be held in July 2017. Besides that, professional activities, including seminar meetings and research collaboration will be held and discussed among local members. Details about these activities will be forthcoming.

IAPR Membership Map 2017



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 TC1 - Statistical Pattern Recognition Techniques

<http://pralab.diee.unica.it/iapr-tc1/>

Battista Biggio, Chair

Luis Muñoz-González, Vice Chair

IAPR TC1 on Statistical Pattern Recognition Techniques aims to promote interaction and collaboration among researchers working in statistical pattern recognition and its related applications.

Since January 2017, the member board has changed, appointing Battista Biggio (University of Cagliari, Italy, <http://pralab.diee.unica.it/en/BattistaBiggio>) as the new TC Chair, and Luis Muñoz-González (Imperial College London, UK, <https://www.doc.ic.ac.uk/~lmunozgo/>) as the new TC Vice Chair. The former TC Chair was Marco Loog (TU Delft, The Netherlands, <http://prlab.tudelft.nl/users/marco-loog>), who is now part of the Advisory Board of the committee.

We are actively working to further expand the number of involved board members, and planning a number of related activities. In particular, we are re-designing the TC website at <http://pralab.diee.unica.it/iapr-tc1/> and updating the mailing list of TC members.

Given the current attention and interest in machine learning algorithms and applications in the research community and industry, we are expanding TC1's topics of interests to face present and future challenges in this area, with a particular focus on the application of data mining and machine learning to cybersecurity.

In this respect, we are planning the organization of a summer school on such topics in 2018, as a follow up of the well established BTIA school (<https://comsec.diee.unica.it/summer-school/>).

The next edition of S+SSPR, to be held in China in 2018, will also be more oriented towards such topics.

If you are working in this exciting domain areas, and want to be kept up-to-date or maybe contribute to the TC's activities please mail to battista.biggio@diee.unica.it.

IAPR Then and Now...31 Years Ago, IAPR Newsletter Vol. 9 No. 2, December 1986 TC1: Statistical Pattern Recognition, Excerpt from the Biennial Report for 1984-86

Committee Composition

The TC1 Committee was formed in the autumn of 1984. Its current composition is as follows:

Dr J Kittler, University of Surrey (UK), Chairman
Prof D Dutta Majumder, Indian Statistical Institute, Secretary
Dr P A Devijver, Philips Research Laboratory (Belgium)
Prof L Devroye, McGill University (Canada)
Prof B Dubuisson, Compiegne University of Technology (France)
Dr R P Duin, Delft University of Technology (The Netherlands)
Dr J Föglein, Hungarian Academy of Sciencee
Prof A K Jain, Michigan State University (USA)
Prof P R Krishnaiah, University of Pittsburgh (USA)
Prof E Oja, University of Kuopio (Finland)

Committee Meetings

The committee met once during the period of the report. [...]

The Committee agreed that the most appropriate mechanism for discharging its responsibility to promote the subject area of TC1 is to hold technical meetings on research topics of current interest and use such meetings to encourage cross-fertilisation between the pattern recognition community and statisticians.

Current Research Topics

The research topics which have been identified by the Committee as warranting special attention include

- formal methods of incorporating contextual information into decision making processes with emphasis on Markov models
- methodology for combining evidence from multiple sources
- theoretical underpinning of heuristic decision making processes
- theoretical underpinning of heuristic image processing algorithms
- advances in classical topics of statistical pattern recognition

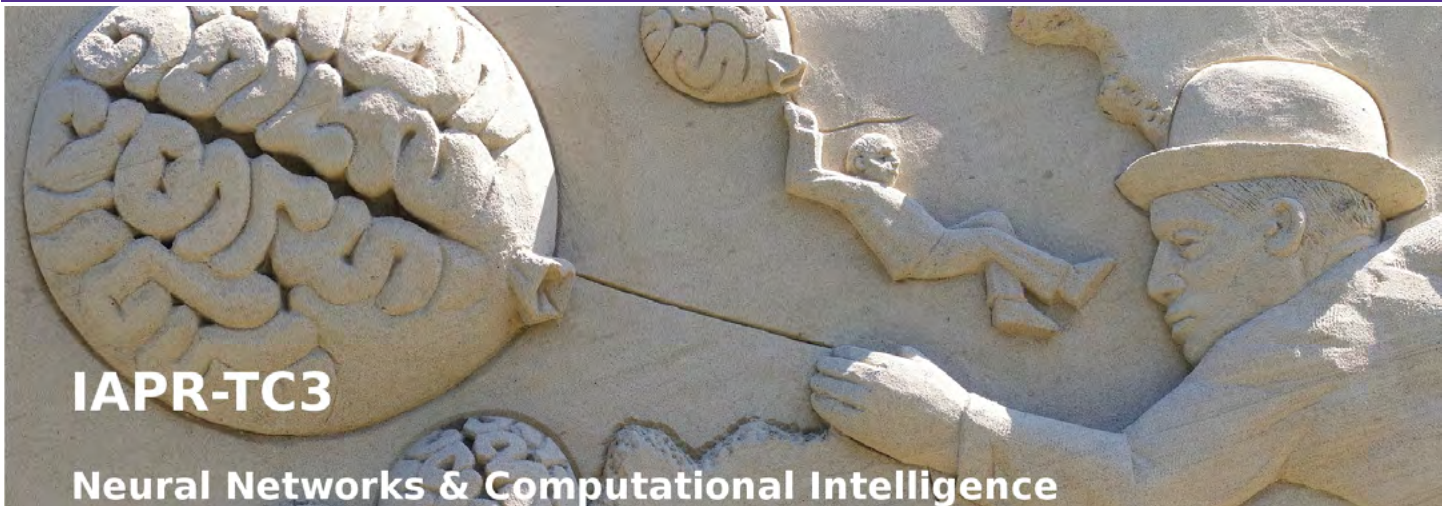
More IAPR Technical Committee News

IAPR TC3 Neural Networks & Computational Intelligence

<http://iapr-tc3.diism.unisi.it/index.html>

[Edmondo Trentin](#), Chair

[Markus Hagenbuchner](#), Vice Chair



The scope of IAPR TC3 is to constitute a forum and promote research in the areas of artificial neural networks, computational intelligence, and machine learning techniques for pattern recognition. During 2016, TC3 gave its endorsement to the International Computer Vision Summer School (ICVSS 2016, <http://iplab.dmi.unict.it/icvss2016/index.html>) and organized the successful 7th edition of the IAPR TC3 Workshop on Artificial Neural Networks in Pattern Recognition (ANNPR 2016, <https://neuro.informatik.uni-ulm.de/ANNPR2016/>) whose proceedings (<http://www.springer.com/it/book/9783319461816#aboutBook>) were published by Springer (see related [report on ANNPR 2016](#) in this issue).

As of January 2017, with the appointment of the new Chair and Vice-Chair, we have a brand new website (check it out at <http://iapr-tc3.diism.unisi.it/index.html>) where you can learn more about TC3, access new resources, and possibly join us (our mailing list features more than 250 fellow scientists worldwide).

We are currently in the process of endorsing the forthcoming International Conference on Pattern Recognition and Artificial Intelligence (ICPRAI 2018, <http://www.icprai2018.com/>) to be held at Concordia University in Montréal (Canada) in May 2018. We are also discussing the preliminaries of the organization of the 8th edition of our biennial workshop, ANNPR, which is scheduled to take place in 2018.

As for our research directions, there is news there as well (a detailed list of topics can be found at <http://iapr-tc3.diism.unisi.it/Research.html>). We decided to take a turn towards off-the-mainstream research. In fact, "mainstream science is about publishing what everyone else is publishing with very small changes" the sociologist Rodney Stark said, and "big ideas don't come to those who avoid risk", as John Bohannon added.

The scientific area of interest to the TC3 makes no exception to these ends. Mainstream topics, originally stemming from exciting breakthroughs (the "big ideas") that gradually become trends and ended-up being mostly over-beaten publishing tracks, have characterized the literature throughout the whole history of our research field. Based on these premises, the TC3 has begun to promote real novel research developments in the areas of neural networks and learning machines for pattern recognition that do not follow in the footsteps of current established trends.

Furthermore, as a follow-up of ANNPR 2016, a Special Issue of the journal Neural Processing Letters on "Off the mainstream: advances in neural networks and machine learning for pattern recognition" (<https://groups.google.com/forum/#!category-topic/ml-news/fPPANFZHyt4>) is undergoing its Editorial process, and is scheduled to be published by the end of 2017.

And ^ More IAPR Technical Committee News

IAPR TC7 - Remote Sensing and Mapping

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

Eckart Michaelsen, Chair

Jie Shan, Vice Chair

IAPR-TC7 is devoted to the use of pattern recognition methods in the analysis of data collected from satellites or airborne sensors used for Earth observation. This has been a major application field for decades, but the progress in sensor construction leads to ever rising masses of data that call for the latest pattern recognition methods. In particular, there are airborne hyper-spectral sensors available now that give high-dimensional data for every pixel, there are ultra-high-resolution synthetic aperture radar images that feature complicated signal effects spread over larger regions, there are low-price unmanned air vehicles yielding Giga-pixel images of centimeter resolution, there are space-borne and airborne thermal data providing very important environmental information, there are high resolution images of urban areas containing very divers classes and categories, and time series analysis becomes possible with frequent revisions, etc. To summarize: there are very interesting challenges in pattern recognition in remote sensing.

We are organizing a PRRS workshop every two years – for the latest see <http://iapr-tc7.de/prrs/PRRS2016.htm>, and we make special issues in high rated journals on PRRS. The last PRRS special issue was with the [Pattern Recognition Letters in 2016](#).

Currently, we have an open call with IEEE-JSTARS (see CfP at right). We closely cooperate with the ISPRS Inter Commission Working Group II/III on Pattern Analysis in Remote Sensing (<http://www2.isprs.org/commissions/comm2/icwg-2-3.html>) and with IEEE GRSS (<http://www.grss-ieee.org/>). It is our intention to bring the three communities IAPR, ISPRS, and IEEE GRSS closer together.

Membership in our TC costs you nothing, while you will be on our mailing list getting our CfPs, and we will contact you for online voting on new chairs. Please contact eckart.michaelsen@iosb.fraunhofer.de. You will be also most welcome if you want to contribute to our activities, such as serving in the program committee, or volunteering for other service in our TC.



**CALL for PAPERS
IEEE-JSTARS**



**IEEE Journal of Selected Topics in Applied
Earth Observations and Remote Sensing**

**Special Issue on
"Pattern Recognition in Remote Sensing"**

**FULL PAPER SUBMISSION DEADLINE:
AUGUST 31, 2017**

Excerpt from: http://iapr-tc7.de/Call_for_Paper_PRRS.pdf

This special issue is following the successfully held 2016 Pattern Recognition in Remote Sensing (PRRS) Workshop (<http://iapr-tc7.de/prrs/PRRS2016.htm>), which was co-organized by the IAPR TC7 on Pattern Recognition in Remote Sensing and Mapping, the Inter Commission Working Group for Pattern Analysis in Remote Sensing (ICWG II/III) of the International Society for Photogrammetry and Remote Sensing (ISPRS), and IEEE Geoscience and Remote Sensing Society (GRSS). This special issue is open to any submission in the scope. For a paper presented in PRRS 2016, it is required that the journal version is 2 to 3 times longer.

Specifically, we invite submissions of unpublished original research in the following topics:

- Feature extraction
- Feature selection and reduction
- Supervised and semi-supervised classification
- Clustering
- Active and transfer learning
- Deep learning
- Target and anomaly detection
- Data fusion
- Nonlinear methods for pattern recognition
- Novel pattern recognition tasks in remote sensing applications
- Technical reviews on related topics

Guest Editors:

Eckart Michaelsen, eckart.michaelsen@iosb.fraunhofer.de

Jie Shan, jshan@purdue.edu

Uwe Stilla, stilla@tum.de

Wei Li, Beijing, liw@mail.buct.edu.cn

And still
More

IAPR Technical Committee News

IAPR TC10 - Graphics Recognition

<http://iapr-tc10.univ-lr.fr/>

[Bart Lamiroy](#), Chair
[Alicia Fornés](#), Vice Chair

The IAPR TC-10 on Graphics Recognition focuses on the broader pattern recognition and interpretation problems related to graphics. Although it has been historically and traditionally linked to Document Image Analysis, it encompasses a quite larger scope of research: graphics are line-based drawings; they are a human construction with an explicit intent to communicate. As such, the borders between graphics recognition and writing are overlapping, but so, too, are its borders with research domains covering more complex visual or kinesthetic representations (like sketches, gestures, and dynamic shape representations). Furthermore, since graphics convey intent, their interpretation necessarily requires a level of context definition, language syntax, or semantics.

Pen-based interfaces, maps and technical drawings, interactions with or transcriptions of geometric representations, music scores or line drawings all provide application domains for Graphics Recognition.

The TC-10 community meets every other year at the IAPR GREC workshop, an event that is traditionally tied and organized in proximity with ICDAR, the Document Analysis flagship conference it co-organizes with TC-11. Since graphics recognition research is often quite well represented and published in classical scientific events like ICPR, ICDAR or DAS, the GREC workshop series focus on interaction, discussion and cross-fertilization of ideas rather than on more traditional presentations of achievements and experiments, making it a greatly appreciated alternative event.

Anyone eager to learn more about the TC-10 activities can contact Bart.Lamiroy@loria.fr.



^ More IAPR Technical Committee News

IAPR TC11 - Reading Systems

<http://www.iapr-tc11.org/>

[Dimosthenis Karatzas](#), Chair
[Masakazu Iwamura](#), Vice Chair

Over the last few months, TC11 (Reading Systems) has been busy working with TC10 (Graphics Recognition) to prepare for ICDAR 2017, which will be held November 10-15 in Kyoto, Japan. We invite you to attend the conference and to take part in one or more of the 25 competitions and 11 workshops and tutorials. There will again be a doctoral consortium at ICDAR, providing students with a valuable opportunity to receive expert feedback and to network with other researchers working on document analysis and recognition. We hope to see you in Kyoto!

Nominations for the IAPR/ICDAR awards are being accepted until May 15th. Instructions for making nominations can be found online:

http://www.iapr-tc11.org/mediawiki/index.php?title=IAPR-TC11:_Newsletter_2017/03

We are also currently accepting proposals to host ICDAR 2021 until June 15th. Proposal requirements can be found on the TC11 web page:

http://www.iapr-tc11.org/mediawiki/index.php?title=IAPR-TC11:Reading_Systems

Other upcoming TC11-affiliated conferences include:

- The 13th International Workshop on Document Analysis Systems (DAS 2018) being held in Vienna April 24-27th, 2018 (papers due: Nov 20, 2017): <https://das2018.caa.tuwien.ac.at/en>
- The 16th International Conference on Frontiers in Handwriting Recognition (ICFHR 2018) being held in Niagara Falls (USA) August 6-10, 2018 (papers due: March 2, 2018): <https://www.cs.rit.edu/~icfhr2018/contact.html>

We invite you to submit your work to these important meetings for the document recognition community.

TC11 can be followed on our recently redesigned web page (see link above). The page includes links to data and software repositories that we encourage you to both use and contribute to. You can also follow our new Twitter page (https://twitter.com/IAPR_TC11). Finally, if you haven't already, we encourage you to sign up for the monthly TC11 newsletter at this link: <https://www.jiscmail.ac.uk/cgi-bin/webadmin?SUBED1=iapr-tc11&A=1>

CALL FOR HOSTING PROPOSALS: ICDAR 2021

DEADLINE: June 15, 2017

The International Conference on Document Analysis and Recognition (ICDAR) is the premier IAPR event in the field of Document Analysis and Recognition.

Any consortium interested in making a proposal to host an ICDAR should first familiarise themselves with the "Guidelines for Organizing and Bidding to Host ICDAR" document which is available on the [TC10](#) and [TC11](#) websites.

The submission of a bid implies full agreement with the rules and procedures outlined in that document.

It has been the tradition that the location of ICDAR conferences follows a rotating schedule among different continents. Hence, proposals from America are encouraged. However, high quality bids from other locations, for example, from countries where we have had no ICDAR before, will also be considered. Proposals will be examined by the ICDAR Advisory Board.

Proposals should be emailed to Dr Dimosthenis Karatzas at dimos@cvc.uab.es and Dr Bart Lamiroy at bart.lamiroy@loria.fr by June 15, 2017

Wow!

More IAPR Technical Committee News

IAPR TC12 Multimedia and Visual Information Systems

<http://iapr-tc12.info>

Sergio Escalera, Chair

Henning Müller and Martha Larson, Vice Chairs

IAPR TC-12: Multimedia and Visual Information Systems, has a main activity on the design and implementation of benchmarking initiatives. These initiatives are performed in collaboration with ChaLearn Looking at People (<http://gesture.chalearn.org/>), ImageCLEF (<http://www.imageclef.org/>), and MediaEval (<http://www.multimediaeval.org/>).

ChaLearn Looking at People and IAPR TC-12 will present the Explainable Computer Vision and Job Candidate Screening competition at [CVPR 2017](#) workshops, 26th July 2017. A large multimedia dataset of "youtubers" is provided, including personality traits annotation, text transcriptions, audio, and video.

The next event at the International Conference on Computer Vision, [ICCV 2017](#), includes two associated challenges related to human behavior analysis: multi-modal human gesture recognition and human emotion recognition (fake versus real expressed emotions) from image sequences. For more information, go to <http://chalearnlap.cvc.uab.es/>.

ImageCLEF and IAPR TC-12 currently have four active tasks with submission deadlines in May 2017 (a task on remote sensing images, one on lifelogging, and then two medical tasks). One of the medical tasks deals with Computed Tomography images (CT) of the lung for detecting one of several types of tuberculosis and also drug resistances. The other medical task aims at prediction of the text of a caption by analyzing the caption image of the biomedical literature with large amounts of training data. The CLEF workshop, of which ImageCLEF is a part, will take place in Dublin in September. More information on <http://www.imageclef.org/>.

Upcoming challenges:



@



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&



Meeting Reports

Conferences, Workshops & Summer Schools

[CIARP 2015](#)

20th Iberoamerican Congress on Pattern Recognition

Montevideo, Uruguay

November 9-12, 2015

<http://www.ciarp.org/xx/>

General Chairs:

[Josef Kittler](#), University of Surrey, UK

[Alvaro Pardo](#), Universidad Católica, Uruguay

by the General Chairs

The 20th Iberoamerican Congress on Pattern Recognition CIARP 2015 (Congreso Iberoamericano de Reconocimiento de Patrones) was the 20th edition of a yearly event organized by scientific associations of Iberoamerican countries in this field. In this special anniversary edition, as in previous years, the congress received contributions from many countries beyond Iberoamerica. The papers presented research results in the areas of pattern recognition, biometrics, image processing, computer vision, speech recognition, and remote sensing, to name a few. The papers tackled theoretical as well as applied contributions in many fields related to the main topics of the conference. In this way, CIARP 2015 continued the tradition of an event that fosters scientific exchange, discussions, and cooperation among researchers.

CIARP 2015 received 185 contributions authored by researchers from 32 countries,

11 of which were Iberoamerican countries. These contributions were reviewed in a double-blind process and 95 papers were accepted. Following tradition, CIARP 2015 was a single-track conference in which 40 papers were selected for oral presentation and 55 were presented in poster sessions. The type of presentation did not imply quality differences. The poster and oral sessions were organized by topic to encourage discussions among authors and attendees.

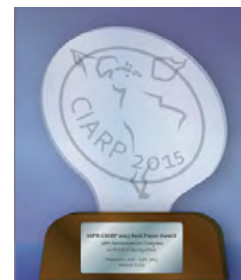
After the reviewing process, an evaluation committee pre-selected a set of papers in the area of image processing and encouraged the authors to submit an extended version to the [Image Processing Online Journal](#) (IPOP). To facilitate the production of all the materials needed to publish the papers in IPOP, the authors were also invited to attend the Training and Hands-On in Reproducible Research Workshop (THORR Workshop) that took place during November 13-14 at the Facultad de Ingeniería, Universidad de

la República. This workshop was dedicated to providing the necessary tools for reproducible research (RR) and training on the IPOP Journal publication process.

As in previous years two awards were given at the congress.

The IAPR-CIARP Best Paper Award recognizes an outstanding contribution to the congress and is aimed at acknowledging excellence and originality of both theoretical contributions and practical applications to the field of pattern recognition and data mining. On the other hand,

the CIARP Aurora Pons-Porrata Award is given to a living woman in recognition to her outstanding contribution to the field of pattern recognition or data mining. The IAPR-CIARP Best Paper Award



was given to Levi Vasconcelos, Erickson Do Nascimento and Mario Campos for their article “A Scale Invariant Keypoint Detector Based on Visual and Geometrical Cues”. The Aurora Pons-Porrata award was given to Cuban researcher Heydi Méndez Vázquez.


Besides the presentation of the 95 selected contributions, four keynote talks were given by Professors Magnus Fontes (Lund University, Sweden and Institut Pasteur, France), René Vidal (Johns Hopkins University, USA), Guillermo Sapiro (Duke University, USA), and Josef Kittler (University of Surrey, UK).

CIARP 2015 was organized by the Uruguayan PR Chapter, including members from Universidad de la República and from Universidad Católica del Uruguay, with the endorsement of the International Association for Pattern Recognition (IAPR) and the sponsorship of national associations from Argentina, Brazil, Chile, Cuba, Mexico, Spain, Portugal.

We acknowledge the work of all members of the Program Committee for their rigorous work in the review process. We are grateful for the partial funding of Administración del Mercado Eléctrico (ADME), Agencia Nacional de Investigación e Innovación (ANII), the French Embassy in Montevideo, the British Embassy in Montevideo, Sonda, Universidad Católica del Uruguay, and Universidad de la República.

Conference proceedings

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





6th International Workshop on Computational Topology in Image Context

Marseille France
June 15-17, 2016

<http://www.lsis.org/ctic2016>

General Chairs:

[Alexandra Bac](#), Aix-Marseille Université, France

[Jean-Luc Mari](#), Aix-Marseille Université, France



Half of the CTIC 2016 participants with a view of Marseille and "Notre-Dame de la Garde"

by Jean-Luc Mari

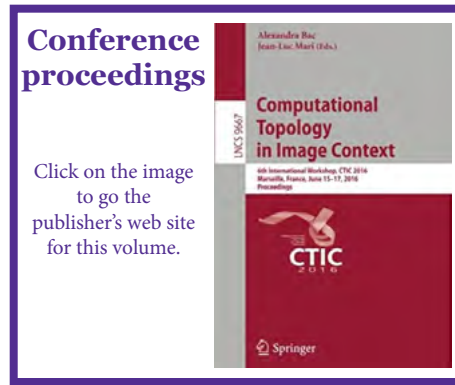
The 6th International Workshop on Computational Topology in Image Context (CTIC 2016) addressed an incredibly large international audience considering the relatively small size of the community in computational topology: 35 papers were submitted originating from 15 different countries. Following a peer-reviewing process by two qualified reviewers, 24 papers were accepted and scheduled for either oral (19) or poster presentation (5). All of them appear in the [Springer LNCS 9667 proceedings](#).

The organization of this conference was a rewarding experience for our research team G-Mod (LSIS laboratory) and for our research group on discrete geometry (G-Dis), part of the Research Federation in Computer Science and Interactions of Aix-Marseille (FRIIAM).

CTIC 2016 was the first edition to be endorsed by the International Association of Pattern Recognition (IAPR). It expresses an increasing interest of researchers in discrete mathematics and computer science for computational topology and its applications. This event was associated with IAPR

Technical Committee 18 ([IAPR-TC18](#)) on Discrete Geometry. Moreover, CTIC 2016 was the second edition to be accepted for publication by Springer as LNCS proceedings. The conference was also supported by our sponsoring institutions: Aix-Marseille Université, the LSIS laboratory, the FRIIAM Federation, the “Archimède” Excellence Laboratory (LabEx Archimède), the “Conseil Régional PACA”, the “Conseil Départemental des Bouches-du-Rhône”, and the City of Marseille. We also thank the engineering school “Polytech Marseille” at Aix-Marseille Université for hosting this event and providing all the necessary facilities.

The community dealing with computational topology grows a little bigger every year. CTIC was initially image-oriented when it was created in 2008 in Poitiers, France. But in 8 years, the topics moved slightly from nD images to more general topological objects, with application to genomics, cosmology, geology, and music analysis. Whenever it is possible to



have a geometric representation of an abstract object or phenomenon, it is then possible to analyze its topology, with tools becoming more and more popular like persistent homology. The latter is actually an inescapable implement for extracting information in a structural way. This has led to a significant expansion of the number of papers dealing with persistence in the last years.

It has been a great honor for us to count on the participation of two internationally renowned researchers as IAPR Distinguished Speakers: Massimo Ferri (Professor of Geometry at the Engineering Faculty of the Bologna University, Department

of Mathematics, Research Center for Mathematical Applications, Advanced Research Center for Electronic Systems “E. De Castro”) and Pascal Lienhardt (Professor of Computer Science at the University of Poitiers, Computer Graphics team, XLIM-SIC, UMR CNRS 7252).

We would like to express our gratitude to the scientific committee members for their helpful comments, which enabled the authors to improve the quality of their contributions, and to Raphaël Maëstre for the design of the CTIC logo.

Finally, our warmest thanks go to the local Organizing Committee (Eric Remy, Aldo Gonzalez-Lorenzo, Ricardo Uribe Lobello) and to the conference secretary, Régine Martin, for their invaluable contribution to the organization of the event.



IAPR-TC18 [Discrete Geometry and Mathematical Morphology](#)

What is TC18 ?

The aim of this IAPR-Technical Committee is to promote interactions and collaboration between researchers working on discrete geometry.

Conferences and a TC web page provide these opportunities. The topic is not covered by other IAPR-TCs, but has links with some of them.

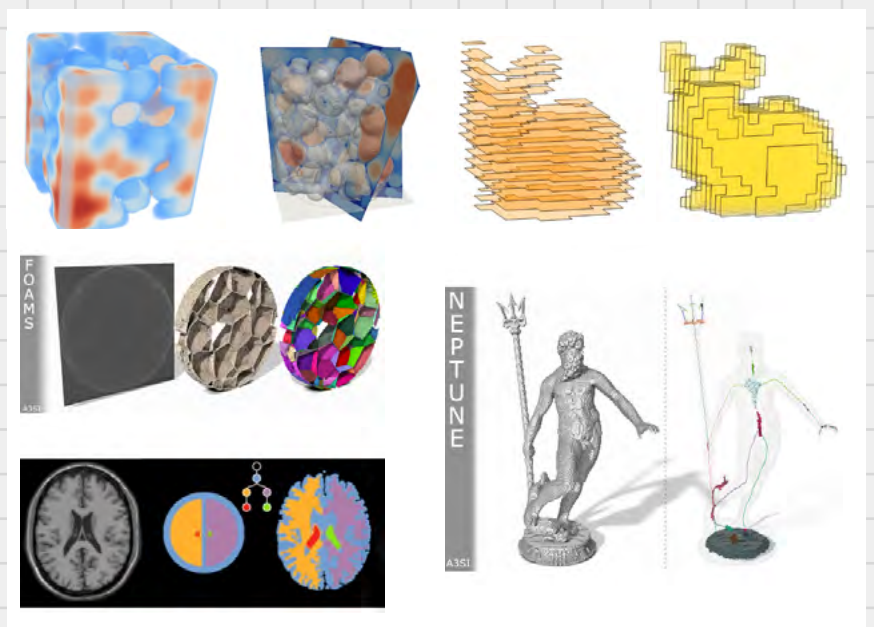




Photo: Hans-Georg Glöckler

[ANNPR 2016](#)

7th IAPR TC3 Workshop on Artificial Neural Networks in Pattern Recognition

Ulm, Germany

September 28-30, 2016

<https://neuro.informatik.uni-ulm.de/ANNPR2016/>

Workshop Chairs:

[Friedhelm Schwenker](#), Ulm University, Germany

Neamat El Gayar, Concordia University, Canada

Hazem M. Abbas, Ain Shams University, Egypt

[Edmondo Trentin](#), University of Siena, Italy

by Friedhelm Schwenker

The 7th IAPR TC3 Workshop on Artificial Neural Networks in Pattern Recognition, ANNPR 2016 was organized by Dr. Friedhelm Schwenker (Ulm University, Germany), Dr. Neamat El Gayar (Concordia University, Canada), Prof. Hazem M. Abbas (Ain Shams University, Egypt) and Prof. Edmondo Trentin (University of Siena, Italy). ANNPR 2016 in Ulm, Germany follows the success of the ANNPR workshops held in Florence (Italy, 2003), Günzburg (Germany, 2006), Paris (France, 2008), Cairo (Egypt, 2010), Trento (Italy, 2012) and Montreal (Canada, 2014). The series of ANNPR workshops have acted as a major forum for international researchers and practitioners working in all areas of neural network- and machine learning-based pattern recognition to present and discuss their latest

research, results, and ideas.

ANNPR 2016 was sponsored by Ulm University, the Transregional Collaborative Research Center SFB/TRR 62 *Companion-Technology for Cognitive Technical Systems* at the Ulm University and Technical Committee on Neural Networks and Computational Intelligence (IAPR-TC3) of the International Association for Pattern Recognition (IAPR). The scope of IAPR-TC3 includes computational intelligence approaches, evolutionary computing, and artificial neural networks and their pattern recognition applications.

For ANNPR 2016, a total of 32 papers were submitted from which 25 high-quality papers were selected for oral presentation. Papers presented original research in neural networks, machine learning and pattern recognition

focusing on both theoretical and applied aspects. The ANNPR 2016 workshop proceeding was published in the Springer LNCS/LNAI series. Participants from different part of the world (Europe, Asia, America and Africa) attended the workshop. During three days, the attendees presented their papers organized in multiple focused sessions. For each session the allotted time was 25 minutes for paper presentation and discussion. The attending researchers were very interested

**Conference
proceedings**

Friedhelm Schwenker - Hazem M. Abbas
Neamat El Gayar - Edmondo Trentin (Eds.)

Artificial Neural Networks
for Pattern Recognition

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7th IAPR TC3 Workshop, ANNPR 2016
Ulm, Germany, September 28-30, 2016
Proceedings



Springer



ANNPR 2016 Participants

and had plenty of questions and suggestions.

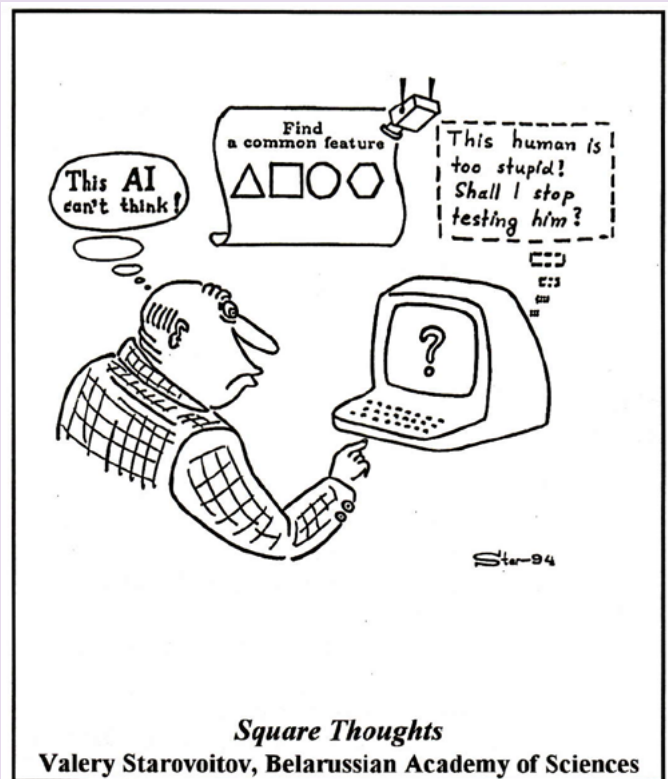
In addition to the regular program three enriching invited talks were given during the workshop. The invited talk "A Spiking Neural Network for Personalised Modelling of Electrogastrography" by Prof. Nikola Kasabov (University of Auckland, New Zealand) presented recent results and theoretical evidence showing the superiority of models of spiking neural networks and discussed the issue of learning personalised models. Prof. Dr. Andreas Knoblauch (University of Applied Sciences Sigmaringen-Albstadt) gave an interesting talk on "Neural Associative Memory" summarizing the major topics and breakthroughs of associative memory models. On the third day, Prof. Dr. Alessandro Sperduti (University of Padova, Italy) gave a talk entitled "Learning Sequential Data with the Help of Linear Systems", where he demonstrated that linear dynamical systems can be powerful tools when dealing with learning of sequential data.

On the second day the attendees enjoyed a guided tour through

the ancient city of Ulm where they visited the *Ulm Minster*, the church with the tallest steeple in the world. They finally reached the destination of the workshop

banquet at the *Brauhaus Dreikannen*, where the participants enjoyed the excellent local *schwabian* food in a welcoming and warm atmosphere.

**IAPR Then and Now...21 Years Ago,
IAPR Newsletter Vol. 17 No. 3, July 1995**



**Square Thoughts
Valery Starovoitov, Belarussian Academy of Sciences**



The Sixth International Workshop on Representation, analysis and recognition of shape motion From Imaging data

Sidi Bou Saïd, Tunisia

October 27-29, 2016

<http://www.arts-pi.org.tn/rfmi2016/index.html>

General Co-chairs:

[B. Ben Amor](#), IMT Lille Douai/CRISTAL CNRS, France

Faten Chaieb, ENSI/CRISTAL, Tunisia

by B. Ben Amor

The goal of the sixth edition of the international workshop on Representations, analysis and recognition of shape and motion From Imaging data (RFMI 2016) was to promote interaction among researchers working on static and dynamic shape analysis and their applications in scene understanding, computer animation, biometrics, robotics, cultural heritage conservation, and medical diagnostics. In fact, the rapid development of emerging imaging sensors technologies (3D/4D cameras, medical imaging devices, cost-effective depth cameras, 3D/4D microscopy, etc.) is pushing forth a new research direction of studying imaged shapes (as well as their motion/deformations) for advanced modelling, statistical analysis, and behaviour understanding.

The workshop received the endorsement from the IAPR and the proceedings were accepted for publication as post-proceedings in the series Communications in Computer and Information Science (CCIS) of Springer (<http://www.springer.com/series/7899>).

The international program committee of RFMI 2016 received

24 submissions among them nine were accepted as regular papers (i.e. 37.5% of acceptance). Six additional papers were accepted as short papers. Between two and six reviewers were involved in a rigorous peer-review process for each submission. All the authors were given the opportunity to present, with 30 minutes for long papers and 15 minutes for short papers. Four distinguished researchers in the field were invited to attend the workshop and give tutorial-form talks on their research and recent trends. Their talks lie on fundamental tasks of shape and motion analysis from imaging data as well as their applications in medical imaging, computer vision, and pattern recognition:

- Anuj Srivastava (IAPR and IEEE Fellow, Professor, Florida State University, USA), *"On Advances in the Role of Differential Geometry in Computer Vision and Pattern Recognition"*
- Xavier Pennec (Senior Research Scientist, INRIA, France), *"Riemannian and Affine Structures for Statistics on Shapes and Deformations in Computational Anatomy"*

- Stefanos Zafeirou (Senior Lecturer, Imperial College London, UK), *"Building the first large scale 3D morphable model of faces"*
- Mubarak Shah (Professor, founding director of the Center for Research in Computer Vision, University of Central Florida, USA), *"Spatiotemporal graphs for object segmentation and human pose estimation in videos"*.

The rest of the program was organized in five oral sessions related to different topics including 2D/3D shape registration and comparison; Video and Motion Analysis; and 2D/3D Face Analysis and Recognition. A total of 45 attendees were present. Around twenty Master students from Tunisian engineer schools (ENSI, INSAT, ISAMM and ENIS) registered at a special rate.

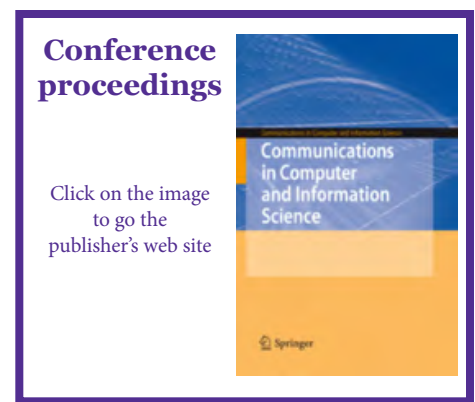
There were two IAPR best paper prizes. The **IAPR Best Paper Award**, was given to the paper *"Shape Analysis based Anti-Spoong 3D Face Recognition with Mask Attacks"* by Yinhang Tang, Liming Chen and Jean-Marie Morvan. The **IAPR Best Student Paper Award** went to the paper *"Accurate 3D shape*

correspondence by a local description Darcyan principal curvature fields " by Ilhem Sboui, Majdi jribi and Faouzi Ghorbel.

The welcome reception was organized at the majestic "Ennejma Ezzahra" palace at Sidi Bou Saïd village. Part of the reception was animated by a young group of traditional Tunisian/Andalusia "Maalouf" music. Furthermore,

a banquet was organized in a traditional restaurant of the town of Tunis.

We are very thankful to the reviewers, the steering committee and all the members of the local organization committee for their excellent work to make RFMI 2016 a successful event.



2016 Convenor:

[Donald Bailey](#), Massey University, New Zealand

Technical Program Chairs:

[Gourab Sen Gupta](#), Massey University, New Zealand

[Stephen Marsland](#), Massey University, New Zealand

by Donald Bailey

IVCNZ is New Zealand's premier conference for innovations in computer vision, image processing, visualisation, and computer graphics. Held annually, it attracts an international forum of scientists and researchers. The 2016 conference, the 31st in the series, was held in the School of Engineering and Advanced Technology at Massey University, in Palmerston North. The conference attracted 79 delegates, mostly from academia, with 25% of those registered coming from outside New Zealand (the most distant was from Germany). 60% of the delegates were students.

We received 91 submissions, which were reviewed by between two and four reviewers. Of the submissions, 51 had the primary author from NZ (56%), 22 from Australia (24%), and the remaining 18 from the rest of the world

(20%). From these, 56 were selected for publication. In keeping with the tradition of IVCNZs past, the conference ran as a single track, with six oral sessions (22 papers) and three poster sessions (33 papers). Of the accepted papers, 38 (69%) were from NZ, 12 (22%) were from Australia, and 5 (9%) from the rest of the world. There was no distinction in the proceedings between oral and poster papers – the papers were selected for oral presentation based on their grouping into topics to fill a session and their likely appeal to a wider audience.

We had two excellent keynote addresses. Prof. Brian Lovell (IAPR Distinguished Speaker) from the University of Queensland spoke on his group's current research on face recognition, particularly in an uncooperative environment. He described some of the challenges in setting up surveillance systems for face

recognition and outlined some of the successes he has had recently. Dr Marcus Freen (Victoria University of Wellington) described some of the techniques he has been working on for detecting interesting objects in images captured by radio telescope. The techniques worked by detecting statistical differences between groups of pixels and the population, enabling both sharp and diffuse sources of interest to be detected.

The review team had difficulty selecting a single best paper, so two best paper awards were made to: Martin Stommel, Stephen Henry & Eleanor Williams for "Baseline method for the decoding of optical markers known as 'snowflakes'", and Victor Wang & Michael Hayes for "Modelling of feature matching performance on correlated speckle images".

Within the program we also had

the NZ Robotics, Automation and Sensing Forum, where a number of applications and challenges of computer vision within robotics, automation and sensing within the New Zealand context were discussed.

The conference provided good opportunities for networking, catching up with colleagues, and making new acquaintances. The conference dinner was held at the Aberdeen Restaurant, which provided superb food.

It was my pleasure to be part of the team working on the organisation of this conference. My thanks go to the rest of the organising committee, in particular the TPC chairs, for organising reviews and selecting the papers for

presentation, and the reviewers for providing timely reviews within quite a tight time frame. I would also like to thank the other members of the organising committee: Lisa Lightband, Dilantha PUNCHIHewa, Tia Cornwall, and Sharlene Lochore. Their efforts greatly assisted in bringing together the various organisational details of this year's conference. On the ground at the conference, Sharlene Lochore looked after the registration desk, and student helpers (Ben, Anoop, and Leo) looked after the presentations, and ensured that the delegates' needs were met.

Many thanks also to the sponsors of this year's conference: the School of Engineering and

Advanced Technology at Massey University for providing administrative support, the International Association for Pattern Recognition for its endorsement and for providing sponsorship towards the travel cost of Prof Brian Lovell (IAPR Distinguished Speaker), and the IEEE New Zealand Central Section for providing technical co-sponsorship. The presented papers are included within the IEEE*Xplore* database.

Next year's conference will be hosted by University of Canterbury.

Proceedings of IVCNZ 2016
have been published in
[IEEE*Xplore*](#)

IAPR Then and Now...18 Years Ago, *IAPR Newsletter* Vol. 21 No. 2, Spring 1999

New Zealand Joins IAPR (excerpt)

A newly formed New Zealand national group in Image and Vision Computing has been granted membership of the IAPR. IVCNZ was formed following discussions at the New Zealand Image and Vision Computing Conference held in Auckland in November last year. Before the formal establishment of IVCNZ, we organised annual conferences and workshops on a rotating basis with various groups making the arrangements, but there was no official representative body. By setting up IVCNZ our aim is to promote the art and science of image processing and computer vision within New Zealand and to encourage international linkages.

At present we have deliberately limited formal membership to institutions and groups to help the establishment of IVCNZ. There is a reasonably small IVC community in New Zealand, so this approach effectively captures the

majority of those working in the field. The operations of the IVCNZ group are controlled by a steering committee currently made up of former conference chairmen [Professor Reinhard Lkette, Dr. Chris Bowman, Dr. Phil Bones, Professor R. M. (Bob) Hodgson, and Dr. David Pairman] who, not surprisingly, are also some of the key players in the field within New Zealand.

Our origins: The origins of our new group date back to 1986, when several image processing researchers in New Zealand organised a national Image Processing Workshop to provide a forum where the growing number of practitioners could exchange ideas. This first event was well attended and was followed up by six more successful workshops, which also attracted international participants, particularly from neighbouring Australia. In 1993, the event was reborn as the

First New Zealand, Conference on Image and Vision Computing (IVCNZ 93), in response to the growth and diversification of image processing activities in New Zealand and the desire for a more international flavour. Seventy papers were presented at the conference, with 25 coming from Australia. Since then, IVCNZ conferences have been held every year including a joint IVCNZ /DICTA conference held in Auckland in 1997. DICTA (Digital Image Computing-Techniques and Applications) is the biennial Australian conference organised by the Australian Pattern Recognition Society(also a member of IAPR). About 100 papers and posters were published in the conference proceedings.

[...]

Chris Bowman



Honorary Chairs:

Said Fekra, Larbi Tebessi University, Algeria
 Mohammed Loufi Benkhedir, Larbi Tebessi University, Algeria

General Chairs:

[Chawki Djeddi](#), Larbi Tebessi University, Algeria
[Imran Siddiqi](#), Bahria University, Pakistan
 Akram Bennour, Larbi Tebessi University, Algeria

Executive Chair:

Mohamed Rida Laouar, Larbi Tebessi University, Algeria

by Imran Siddiqi

The first Mediterranean Conference on Pattern Recognition and Artificial Intelligence (MedPRAI-2016) was organized by the department of Mathematics and Computer Science at Larbi Tebessi University, Tebessa, Algeria. The event was aimed at providing an interdisciplinary forum of discussion to share the recent advancements in different areas of pattern recognition and artificial intelligence and was endorsed by the International Association of Pattern Recognition (IAPR).

MedPRAI received a total of 101 research contributions out of which 28 were accepted for presentation and publication after a thorough and competitive paper review and selection process. The conference comprised oral sessions where authors presented their research contributions in different areas of Pattern Recognition and Artificial Intelligence.

Two keynote talks were delivered at the conference. Prof. Sankar Kumar Pal from Indian Statistical Institute, India, delivered the talk entitled "*Granular Data Mining and*



Rough-fuzzy Computing: Data to Knowledge and Big Data Issues". The second keynote talk, "*Recent Trends in Image Processing, from Medical Diagnosis to Document Analysis: Applications and Challenges*", was delivered by Dr. Abbas Cheddad from Blekinge Institute of Technology, Sweden. The biographies of the keynote speakers along with the slides of the talk have been made available on the conference website.

Two awards were announced at the conference: the "IAPR Best Paper Award" and "IAPR Best Student Paper Award". The IAPR Best Paper Award was presented to Imene Ferdi and Abdesslem Layeb for "A

Novel Heuristic Based Simulated Annealing for the Capacitated Location Routing Problem". And, the IAPR Best Student Paper Award was presented to Mohamed Cherif Nait-Hamoud, Fedoua Didi and Yaakoub Boualleg for "*Core Community Detection Algorithm based on Edge Removal Learning*".

The second MedPRAI will be held on 27-28 March 2018 at Rabat Morocco. Prof. Mohamed El Youssefi El Kettani from Ibn Tofail University, Morocco, is the focal person for this edition of MedPRAI.

Proceedings of MedPRAI 2016 have been published in [ACM Digital Library](#)

IAPR Joint International Workshops on Statistical Techniques in Pattern Recognition (SPR 2016) and Structural and Syntactic Pattern Recognition (SSPR 2016)

Mérida, Mexico
November 30-December 2, 2016

S+SSPR 2016 Organizing Committee:

[Antonio Robles-Kelly](#), Australian National University, Australia

[Marco Loog](#), Delft University of Technology, The Netherlands

[Battista Biggio](#), University of Cagliari, Italy

[Francisco Escolano](#), University of Alicante, Spain

[Richard Wilson](#), University of York, UK

Editor's note:

Also in this issue of the IAPR Newsletter, please "[Get to Know](#)" [Mário Figueiredo](#), IAPR Fellow and winner of the 2016 Pierre Devijver Award at the S+SSPR 2016.

~ Arjan Kuijper, Editor-in-Chief

by The Organizing Committee

The joint IAPR International Workshops on Structural and Syntactic Pattern Recognition and Statistical Techniques in Pattern Recognition, or S+SSPR for short, is a two-track workshop organized every two years in the week before ICPR. In 2014 it was held in Joensuu, Finland. In 2016, S+SSPR visited the land of the golden eagle: Mexico. More precisely, the workshop took place in Mérida: the capital of Yucatán and the largest city on the Yucatán Peninsula. It boasts the second-largest historic center in Mexico after Mexico City and offered a pleasant backdrop for the workshop.

For many of our regular attendees, Mérida was maybe a bit too far out and, similar to ICPR, we were confronted with a significant drop in participants. Nevertheless, the workshop was a definite success. The small scale allowed for intense and in-depth discussions of a scientific level seldom found at the larger venues. The 51 accepted papers spanned a wide variety of topics in structural, syntactic, and statistical pattern recognition. Like other years, S+SSPR 2016 attracted participants working in a wide variety of fields that make use of pattern recognition techniques as well as researchers who make methodological contributions to the field. Also in this year, it resulted in a rich mix of papers with applications in image processing, computer vision, bioinformatics, chemoinformatics, machine learning, and document analysis. Professor Sudeep Sarkar from the University of South Florida and Professor Hamid Krim from North Carolina State University both gave invited lectures.

The Pierre Devijver Award, established by the IAPR TC1 on Statistical Pattern Recognition Techniques to recognize outstanding scientists who had contributed significantly to the field of statistical pattern recognition, was assigned to Professor Mário Figueiredo (Instituto Superior Técnico in Lisbon, Portugal). His lecture, entitled "*Selection and Grouping of Correlated Features*", provided useful and inspiring research insights to all the participants, stimulating interesting follow-up discussions.

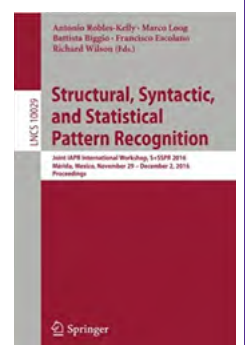
Some good food and welcome divertissements were also arranged. The lunches were delicious, even though some of us had to stay away from the hot sauce! The high point was a visit to Hacienda Sotuta de Peón with a nice conference dinner and sisal tasting (sisal is a tequila-like liquor distilled from the homonymous Mexican agave), along with an excellent swim in cenote Dzul Ha.

We are really looking forward to organizing the next S+SSPR workshop, and visiting China, in 2018!

Click [here](#) to learn more about the Technical Committees of the IAPR

Conference
proceedings

Click on the image
to go the
publisher's web site





General Chairs:

[Jun Zhou](#), Griffith University, Australia

[Yongsheng Gao](#), Griffith University, Australia

[Michael Blumenstein](#), University of Technology Sydney, Australia

by Jun Zhou

DICTA 2016 was held at Mantra on View Hotel in Gold Coast, Australia. DICTA is the main Australian Conference on computer vision, image processing, pattern recognition, and related areas. Established in 1991 as the premier conference of the Australian Pattern Recognition Society (APRS), DICTA has been successfully held in major cities in Australia and New Zealand during the past 25 years, but this was the first time that DICTA was held in Gold Coast.

In this year, a total of 179 papers were received for consideration. After double-blind review with at least 3 reviews assigned to each paper, 114 papers (63.7%) were accepted. Among the accepted papers, 35 papers (19.6%) were chosen for oral presentation, and 79 papers (44.1%) were assigned for the poster sessions. These papers were presented in eight oral sessions and two poster sessions under a single track setting. The proceedings of DICTA 2016 will be published by the IEEE.



The ratio of accepted papers with student first author vs. non-student first author was 88 to 26. Almost half of the accepted papers (51 out of 114) were contributed by authors from outside Australia, i.e. they came from over 20 countries spanning across Asia, Europe, the United States, and South America, even though DICTA is considered a predominantly Australian conference.

The main conference was highlighted by four keynote talks:

- *“From AdaBoost to Optimal Margin Distribution Machines”* by Zhi-Hua Zhou, Nanjing

University, China

- *“Augmenting human mind by gaze-based technologies”*, by Andreas Dengel, the German Research Center for Artificial Intelligence, Germany
- *“Challenges and opportunities in hyperspectral image analysis”*, by Jocelyn Chanussot, Grenoble Institute of Technology, France
- *“Are you a human or a robot?”* by Yanxi Liu, the Pennsylvania State University, USA

A pre-conference tutorial session was delivered by Lingqiao Liu,

Proceedings of DICTA 2016
have been published in
[IEEE Xplore](#)

Guosheng Lin, Qi Wu, and Vijay Kumar, all from the University of Adelaide. The title of this tutorial was *“Deep Learning and Its Applications in Computer Vision”*. More than 80 participants attended this event held at the Gold Coast campus of Griffith University.

The DICTA 2016 banquet was held at the restaurant on the Skypoint Observation Deck at the 77th floor of Q1 which is the tallest building in the southern hemisphere. During the banquet, three conference awards were presented:

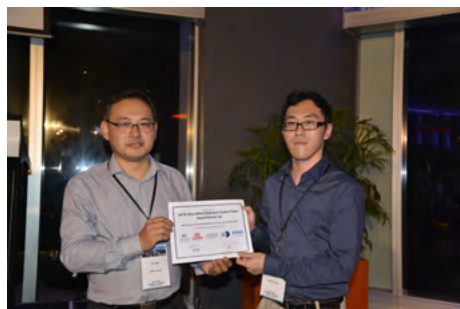


- DSTG Award, to the paper *“A Novel Online Bayes Classifier”*, by Thi Thu Thuy Nguyen, Tien Thanh Nguyen, Xuan Cuong Pham, Alan Wee-Chung Liew, Yongjian Hu, Tiancai Liang, Chang-Tsun Li

We would like to thank the generous support from our sponsors for the above-mentioned awards and other activities during the conference. The sponsors of DICTA 2016 include the Defence Science and Technology group (DSTG), CiSRA, APRS, IAPR, and the IEEE. Particular thanks go to Griffith University which provided



- APRS/IAPR Best Paper Award, to the paper *“Exploiting Temporal Information for DCNN-based Fine-Grained Object Classification”*, by ZongYuan Ge, Chris McCool, Conrad Sanderson, Peng Wang, Lingqiao Liu, Ian Reid, Peter Corke



- APRS/CiSRA Best Student Paper Award, to the paper *“Hierarchical Mutual Nearest Neighbour Image Segmentation”*, by SM Abdullah, Peter Tischer, Sudanthi Wijewickrema, Andrew Paplinski

financial sponsorship as well as services in finance, conference registration, tutorial arrangements, and staff hours.

This event could not have been possible without the time and efforts from the Technical Program Chairs, Local Arrangement Chairs, Proceedings Chair, Publicity Chair, Treasurer, Web Chair, and the Advisory Committee. We also would like to thank all the 111 Technical Program Committee members and reviewers for their dedicated hours in evaluating the quality of the submitted papers. A number of administrative staff and student volunteers in Griffith University provided ongoing support to make the conference run smoothly. During the conference preparation stage, Norma Swain from the Gold Coast Tourism Corporation gave us lots of help. We are grateful for these great contributions.

DICTA 2017

November 29 - December 1, 2017
Manly Beach, Sydney, Australia

Special session proposal submission deadline: June 9, 2017
Paper submission deadline: July 9, 2017
Tutorial proposal submission deadline: August 25, 2017

IAPR/IEEE WINTER SCHOOL ON BIOMETRICS

9-13 JANUARY 2017 | HONG KONG BAPTIST UNIVERSITY, HONG KONG



School Directors:

[P C Yuen](#), Hong Kong Baptist University, Hong Kong
[Zhenan Sun](#), Chinese Academy of Sciences, China
[Norman Poh](#), University of Surrey, UK

by the School Directors and [Anran Wang](#), (Hong Kong Baptist University, Hong Kong)

Summary report:

The IAPR/IEEE Winter School on Biometrics was jointly organized by the Department of Computer Science, Hong Kong Baptist University and the Institute of Automation, Chinese Academy of Sciences, and was co-sponsored by the ICTS (The Institute of Computational and Theoretical Studies), the IAPR, the IEEE, and Wisosoft. The school was a training course to promote research in biometrics and related fields.

To consolidate the fundamental knowledge of biometrics and share the latest biometric development, the scope of the course was designed to cover a range of topics including fundamental concepts of different biometric modalities, mobile biometrics, anti-spoofing, and template protection. Based on advanced biometric technology, the main objective of the course was to equip the participants with up-to-date biometric knowledge and provide an opportunity for the participants to develop their own personal and professional connections for their future careers. The course included lectures, poster sessions, a welcome reception, and a social programme.

Several subjects were taught at the Winter School forming a total of 24 hours of lectures from 16 different lecturers, covering biometric identification with iris, face, gait, fingerprint and palm print, security in biometric systems, mobile biometrics, deep learning and machine learning for biometrics, and multimodal biometrics. The covered subjects were conducted by internationally renowned experts, selected from the editorial boards of top-level scientific journals and conferences. All lectures, presented the most up-to-date view in biometric data analysis. To encourage sharing and communication, an open poster session and a half-day social programme were organized for all participants to present a poster of their research work and discuss future collaboration opportunities.

Complete list of lecturers and the presented lectures:

Monday, Jan 9

- Prof. Tieniu Tan (Chinese Academy of Sciences, China) Biometric Data Analysis
- Dr. Norman Poh (University of Surrey, UK) Multimodal Biometrics with Auxiliary Information: Quality, User-specific, Cohort information and beyond
- Prof. Massimo Tistarelli (University of Sassari, Italy) 2D and 3D Face Recognition
- Prof. Liang Wang (Chinese Academy of Sciences, China) Human Identification via Gait Recognition

Tuesday, Jan 10

- Prof. David Zhang (The Hong Kong Polytechnic University, Hong Kong) Hand-Based Biometrics
- Prof. Zhenan Sun (Chinese Academy of Sciences, China), Recent Progress of Iris Recognition

Wednesday Jan 11

- Prof. Jaihie Kim (Yonsei University, Korea) Mobile Biometrics: Trends and Issues
- Dr. Chen-change Loy (The Chinese University of Hong Kong) Deep Learning in Face Analysis

Thursday Jan 12

- Prof. Yasushi Yagi (Osaka University, Japan) Human Gait Analysis
- Dr. Jianjiang Feng (Tsinghua University, China) Fingerprint Recognition
- Prof. Weishi Zheng (Sun Yat-sen University, China) Machine Learning for Person Identification
- Dr. Terence Sim (National University of Singapore, Singapore) Soft Biometrics and Continuous Authentication

Friday Jan 13

- Prof. Brian Lovell (The University of Queensland, Australia) Secure Scalable CCTV, Mobile, and Wearable Video Face Recognition
- Dr. Yi Wang (Hong Kong Baptist University, Hong Kong) Biometric Indexing
- Prof. Ajay Kumar (The Hong Kong Polytechnic University, Hong Kong) Accurate Personal Identification using Finger Knuckle and Finger Vein Biometric Images
- Prof. P C Yuen (Hong Kong Baptist University, Hong Kong) Face Recognition System Security: Face Template Protection and Anti-spoofing

Student participation and activities:

The school received 52 applications, and 34 participants attended. The class was formed by participants coming from different universities, industries, and research centers in the following three countries (in brackets are the number of participants): Hong Kong (3), Mainland China (29), and United Kingdom (2).

Participants were not only highly motivated but also demonstrated a deep understanding of both theory and application of biometric data analysis. During the Winter School, participants had the opportunity to interact with the most experienced lecturers in the field directly. Both participants and lecturers have been much involved in technical discussions and potential collaboration opportunities.

In the open poster session, the participants were offered the possibility to present a poster about their research activity. Student poster awards were provided to encourage communication. A total of eight students were partially supported

by a grant from the IAPR. Besides, a grant provided from the IEEE partially supported three students who received IEEE Student Travel Grant Award.

The following awards, supported by the IAPR were presented:

IAPR Best Student Poster Award

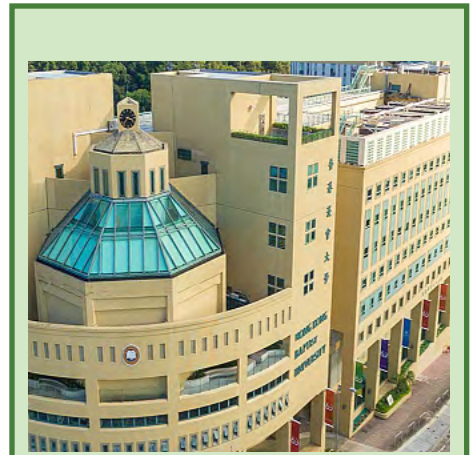
- Mr. Ancong Wu (Sun Yat-sen University)

IAPR Nominated Student Poster Award

- Mr. Jingke Meng (Sun Yat-sen University)
- Mr. He Chenhang (The Hong Kong Polytechnic University)

IAPR Student Travel Grant Award

- Mr. Zehao Shi (Sichuan University)
- Miss Fuxuan Chen (Sichuan University)
- Mr. Rui Huang (Sun Yat-Sen University)
- Mr. Shun cheung Lai (The Hong Kong Polytechnic University)
- Mr. Jian Wu (Harbin Institute of Technology, Shenzhen Graduate School)



Videos of the lectures have been posted at the WSB17 website.



ICPRAM 2017

6th International Conference on Pattern Recognition Applications and Methods

Porto, Portugal · 24 - 26 February, 2017

<http://www.icpram.org/?y=2017>

Conference Chair:

Ana Fred, Instituto de Telecomunicações/IST, Portugal

Program Co-Chairs:

Maria De Marsico, Sapienza University of Rome, Italy

Gabriella Sanniti di Baja, ICAR-CNR, Italy

by the Conference Chair and
Program Co-Chairs

The 6th International Conference on Pattern Recognition Applications and Methods (ICPRAM 2017) was held in the charming town of Porto (Portugal). The ICPRAM series of conferences is sponsored by the Institute for Systems and Technologies of Information, Control and Communication (INSTICC) and is presently endorsed by the International Association for Pattern Recognition (IAPR). Aiming at being a venue for researchers with different interests in pattern recognition, the conference also has the "in cooperation" status with: ACM Special Interest Group on Applied Computing (ACM SIGAPP), ACM Special Interest Group on Artificial Intelligence (ACM SIGAI), Italian Association for Artificial Intelligence (AI*IA), International Neural Network Society (INNS), Associação Portuguesa de Reconhecimento de Padrões (APRP), and Association for the Advancement of Artificial Intelligence (AAAI).

Since its first edition, the main goal of ICPRAM has been to provide a meeting forum for researchers and practitioners active either in theory or in applications of the manifold

branches of this fascinating research field. Conference attendees can mutually benefit from their respective scientific achievements and hopefully establish novel and original threads of collaboration, since the number of possible applications of pattern recognition theories and methods is tremendously increasing. On one hand, this is spurred by the availability of new technological resources. On the other hand, it requires either the investigation of new approaches or the combination and modification of multiple existing ones, originally designed to solve a different specific problem.

The premise underlying the conference, which is evident in the title, is that theory can find a significant test-bed in practical applications, and that, at the same time, any technological design



ICPRAM 2017 Gala Dinner

must rely on solid theoretical foundations. Thus, ICPRAM aims at gathering in a single venue researchers working on applications of pattern recognition techniques for the solution of real-world problems, researchers whose theoretical studies provide new insights advancing pattern recognition methods, and scientists active in interdisciplinary research.

This edition of ICPRAM received 139 submissions from 33 countries, 68 % of which were accepted. Out of the accepted papers, 29 were selected for oral presentation as full papers, 31 for oral presentation as short papers (for a total of 18 oral sessions), and 34 as posters (in two poster sessions). The acceptance rate shows the intention of preserving a high quality forum for the next editions of this conference. Moreover, for each of the two ICPRAM areas, "Theory & Methods" and "Applications", a "Best Paper Award" and a "Best Student Paper Award" were assigned to the author(s) of selected ICPRAM 2017 full papers. The winning papers were chosen by the Program/Conference Chairs based on the best combination of review marks, assessed by the

Program Committee, and of paper presentation quality, assessed by Session Chairs and Program Chairs at the conference venue. For this edition, the winning papers were:

- Best Paper Award (Theory & Methods): “How New Information Criteria WAIC and WBIC Worked for MLP Model Selection” by Seiya Satoh and Ryohei Nakano;
- Best Student Paper Award (Theory & Methods): “Domain Adaptation Transfer Learning by SVM Subject to a Maximum-Mean-Discrepancy-like Constraint” by Xiaoyi Chen and Régis Lengellé;
- Best Paper Award (Applications): “Compression Techniques for Deep Fisher Vectors” by Sarah Ahmed and Tayyaba Azim;
- Best Student Paper Award (Applications): “Analysis of Regionlets for Pedestrian Detection” by Niels Ole Salscheider, Eike Rehder and Martin Lauer.

Authors of a number of papers that were accepted as full papers will be invited to submit an extended version for a book in the Springer LNCS Series.

Besides the above accepted contributions, the conference program also included four invited talks by internationally distinguished speakers:

- “The Next Grand Challenge in Computer Vision: From Gesture Recognition to Sign Language Recognition” by Lale Akarun, Bogazici University, Turkey;
- “Re-identification: State of the Art and Current Trends” by Vittorio Murino, Istituto Italiano di Tecnologia (IIT), Italy;
- “Speech Technologies: Reaching Maturity?” by Isabel Trancoso, L2f INESC-ID/IST, Portugal;
- “Learning to See by Hearing” by the IAPR distinguished speaker Antonio Torralba, winner of the 2010 J.K. Aggarwal Prize, Massachusetts Institute of Technology, United States.



Lale Akarun, Antonio Torralba, and Isabel Trancoso were also panelists in a very stimulating discussion panel with title “The Role of the Expert in the Era of Big Data”.

Last but not least, the conference events also included an interesting tutorial by Jamal Atif (Université Paris-Dauphine, France) and Isabelle Bloch (Télécom ParisTech, Université Paris-Saclay, France) with title “Symbolic and Structural Models for Image Understanding” that was attended by 24 registered participants.

Besides the rich technical program, ICPRAM 2017 offered the participants different opportunities to meet and discuss in a relaxed atmosphere, such as a guided tour to one of the most famous wineries of Porto, followed by a superb dinner enlivened by the performance of a popular dance and singing group.

We look forward to seeing you at the 7th edition of ICPRAM in the beautiful location of Funchal, Madeira, Portugal, January 16-18, 2018 (<http://www.icpram.org/?y=2018>)”

ICPRAM 2018

7th International Conference on Pattern Recognition Applications and Methods

Funchal, Madeira - Portugal

16 - 18 January, 2018





This bulletin board
contains items of interest to the
IAPR Community



Springer



Through an agreement with Springer, IAPR members can get discounted electronic subscriptions to the International Journal on Document Analysis and Recognition (IJ-DAR) and Machine Vision and Applications (MVA).

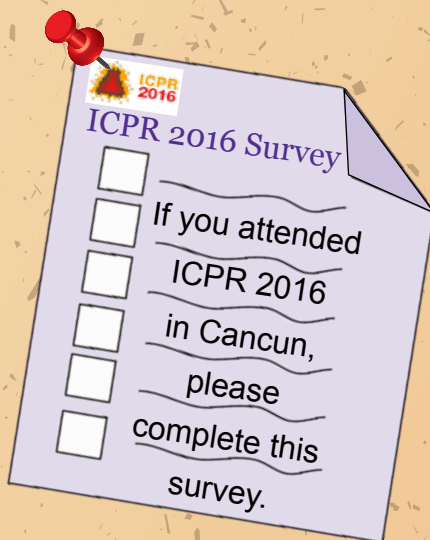


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Meeting and Education Planner

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

NOTE: Highlighting indicates that the paper submission deadline is still open.

* Asterisks denote non-IAPR events *

	Meeting	Report on previous edition	Venue
2017	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
	SSB 2017 : 14th IAPR/IEEE International Summer School on Biometrics	Biometrics 2016 Italy	
	IGS 2017 : 18th International Graphonomics Society Conference	Italy	
	JUN	MCPR 2017 : 9th Mexican Congress on Pattern Recognition	MCPR 2016 Mexico
	JUL	* ICVSS 2017 : International Computer Vision Summer School: From Representation to Action and Interaction *	ICVSS 2016 Italy
	ICPRS 2017 : 8th International Conference on Pattern Recognition Systems	Spain	
	AUG	* CAIP 2017 : 17th International Conference on Computer Analysis of Images and Patterns *	Sweden
	SEP	ICIAP 2017 : 19th Intl. Conference on Image Analysis and Processing	ICIAP 2015 Italy
	ICIG 2017 : The 9th International Conference on Image and Graphics	China	
	* GCPR 2017 : 39th German Conference on Pattern Recognition *	Germany	
	DGCI 2017 : 20th International Conference on Discrete Geometry for Computer Imagery	DGCI 2016 Austria	
	OCT	IJCB 2017 : 3rd International Joint Conference on Biometrics	USA
	NOV	CIARP 2017 : 22nd Iberoamerican Congress on Pattern Recognition	CIARP 2015 Chile
	* GREC 2017 : 12th International Workshop on Graphics Recognition *	GREC 2015 Japan	
	ICDAR 2017 : 14th International Conference on Document Analysis and Recognition	Japan	
	PSIVT 2017 : 8th Pacific Rim Symposium on Image and Video Technology	PSIVT 2015 China	
	ACPR 2017 : 4th Asian Conference on Pattern Recognition	ACPR 2015 China	
	DEC	DICTA 2017 : 2017 International Conference on Digital Image Computing: Techniques and Applications	DICTA 2016 Australia
PreMI 2017 : 7th International Conference on Pattern Recognition and Machine Intelligence	PreMI 2015 India		

<http://www.iapr.org/conferences/>

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

* Asterisks denote non-IAPR events *

		Meeting	Report on previous edition	Venue
2018	FEB	ICB 2018 : 11th International Conference on Biometrics	ICB 2016	Australia
	MAR	MedPRAI 2018 : The Second Mediterranean Conference on Pattern Recognition and Artificial Intelligence	MedPRAI 2016	France
	NOV	DAS 2018 : 13th International Workshop on Document Analysis Systems	DAS 2016	Austria



*Thoughts on articles
you've read in this issue of the
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Ideas for features you'd like
to see in the IAPR Newsletter?*

Send your comments to:

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