

IAPR

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# Newsletter

Volume 41, Number 1  
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## From the Editor's Desk: Hello from the New EiC

by Jing Dong

[jdong@nlpr.ia.ac.cn](mailto:jdong@nlpr.ia.ac.cn)

<http://cripac.ia.ac.cn/en/EN/column/item113.shtml>



I started this brand-new journey as the new *IAPR Newsletter* Editor-in-Chief with the beginning of 2019. It will be a significant and meaningful experience for me and also a great honor. I believe that the *Newsletter* is a window of wisdom and the spirit of communication for the researchers and research applications within our IAPR community.

As the new editor, I would like to take this opportunity to thank all contributors to the *Newsletter* in the past years for their remarkable contributions and hard work to maintain the high quality of the publication. I am also expecting a happy collaboration with Linda, Arjan, Owais and IAPR ExCo to continue to provide our community with interesting information and material.

In our regular newsletters, you will find CfP information and upcoming activities and opportunities, stories from senior and early career researches about their experiences, book reviews and free book offers, plus the IAPR's latest news and bulletins from the wider PR community. I hope that your reading of our newsletter is most productive, relaxed and enjoyable.

Also, we do encourage more NEW ideas, features and proposals to enhance its usefulness to the community. We always value your input for making our newsletter—*your* newsletter—more beneficial.

Please feel free to contact me ([jdong@nlpr.ia.ac.cn](mailto:jdong@nlpr.ia.ac.cn)) to share your thoughts.

*From the Editor's Desk*

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### About the Editor

*Dr. Jing Dong is an associate professor in the National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences. She is currently doing research in visual pattern recognition for image forensics and security.*

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# 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/](http://www.iapr.org/conferences/)

## 2019

### [SCIA 2019](#)

2019 Scandinavian Conference on Image Analysis  
Norrköping, Sweden  
Deadline: Jan. 30, 2019  
Dates: Jun. 11-13, 2019

### [PRIP 2019](#)

14th International Conference on  
Pattern Recognition and Information Processing  
Minsk, Belarus  
Deadline: Feb. 1, 2019  
Dates: May 21-23, 2019

### [ICDAR 2019](#)

15th International Conference on  
Document Analysis and Recognition  
Sydney, Australia  
Deadline: Feb. 15, 2019  
Dates: Sep. 20-25, 2019

### [IbPRIA 2019](#)

9th Iberian Conference on  
Pattern Recognition and Image Analysis  
Madrid, Spain  
Deadline: Mar. 1, 2019  
Dates: Jul. 1-4, 2019

### [ICPRS 2019](#)

10th International Conference on  
Pattern Recognition Systems  
Tours, France  
Deadline: Mar. 13, 2019  
Dates: Jul. 8-10, 2019

### [CAIP 2019](#)

18th International Conference on  
Computer Analysis of Images and Patterns  
Salerno, Italy  
Deadline: Apr. 1, 2019  
Dates: Sep. 3-5, 2019

### [PReMI 2019](#)

8th International Conference on  
Pattern Recognition and Machine Intelligence  
Tezpur, India  
Deadline: Apr. 16, 2019  
Dates: Dec. 17-20, 2019

### [ISAIR 2019](#)

4th International Symposium on  
Artificial Intelligence and Robotics 2019  
Daegu, Korea  
Deadline: Apr. 30, 2019  
Dates: Aug. 20-24, 2019

### [CVIP 2019](#)

Fourth International Conference on  
Computer Vision and Image Processing  
Jaipur, India  
Deadline: May 15, 2019  
Dates: Sep. 27-29, 2019

### [CIARP 2019](#)

24th Iberoamerican Congress on Pattern Recognition  
Havana, Cuba  
Deadline: May 18, 2019  
Dates: Oct. 28-31, 2019

### [MedPRAI 2019](#)

3rd Mediterranean Conference on  
Pattern Recognition and Artificial Intelligence  
Istanbul, Turkey  
Deadline: Jun. 14, 2019  
Dates: Dec. 22-24, 2019

### [ACPR 2019](#)

5th Asian Conference on Pattern Recognition  
Auckland, New Zealand  
Deadline: Jun. 14, 2019  
Dates: Nov. 26-27, 2019

## 2020

### [ICFHR 2020](#)

17th International Conference on  
Frontiers in Handwriting Recognition  
Dortmund, Germany  
Deadline: TBD  
Dates: Aug. 31 - Sep. 8-10, 2020

### [ICPR 2020](#)

25th International Conference on  
Pattern Recognition  
Milan, Italy  
Deadline: TBD  
Dates: Sep. 13-18, 2020

# Calls from IAPR Committees

From the IAPR Education Committee:

## Call for Applications for IAPR Research Scholarships

<https://iapr.org/docs/IAPR-EC-RS-Call-2018.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 and duration:** The scholarship covers round trip travel & basic living expenses for a visit of less than 12 months.

**Requirements:** The candidate must be a full-time researcher with between one and eight years experience. The candidate must also be a member of an IAPR member society. See [Call for Applications](#) for a full list of requirements.

### Contact information:

IAPR Secretariat

c/o Linda O'Gorman, [secretariat@iapr.org](mailto:secretariat@iapr.org)

From the IAPR Industrial Liaison Committee:

## Call for Internship Listings for the IAPR Internship Brokerage Page for Companies with internships available and for Students seeking internship opportunities

<http://homepages.inf.ed.ac.uk/rbf/IAPR/INDUSTRIAL/>

**Description:** The IAPR-ILC wishes to promote opportunities for students to undertake internships at companies working in Pattern Recognition, AI, Computer Vision, Data Mining, Machine Learning, etc. We propose to do this by having a web-based internship listing service. Companies can list their internship opportunities; students can browse the listings and contact the company.

### For companies with internships to list: For students:

(see examples at the URL above)

If you are a student, please visit the web site listed above.

Please email your listings as follows:

To: Bob Fisher - [rbf@inf.ed.ac.uk](mailto:rbf@inf.ed.ac.uk)

Subject: IAPR internship listing

Details:

- Host:
- Location:
- Post Type:
- Specialty:
- Funded:
- Length:
- Degree & Visa Requirements:
- Internship start date:
- Application closing date:
- Details:
- Contact:

**NOTE:** At the time of publication, there were 23 opportunities listed and over 6000 views.

### Contact Information:

Bob Fisher, [rbf@inf.ed.ac.uk](mailto:rbf@inf.ed.ac.uk)  
Chair, IAPR-ILC

From the IAPR

Executive Committee (ExCo):

## Call for Proposals for "Summer" Schools

<https://iapr.org/committees/SummerSchool-2018.pdf>

**Deadline: February 1, 2019  
(for schools planned for  
April 2019 - July 2019)**

"Summer" schools are training activities that expose participants to the latest trends and techniques in the particular pattern recognition field. ("Summer" is used generically; the school can take place in any season.)

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.

**How to Submit:** Proposals for IAPR funded summer schools should be submitted to IAPR Secretariat Linda O'Gorman by email ([secretariat@iapr.org](mailto:secretariat@iapr.org)). A PDF attachment containing all the required information is appreciated.

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

## Getting to know...Edwin Hancock, IAPR Fellow



*Edwin Hancock, IAPR Fellow  
ICPR 2000, Barcelona*

*For contributions to  
structural & statistical pattern recognition,  
and to computer vision*

*Edwin Hancock graduated with a BSc degree in physics in 1977, a PhD degree in high energy nuclear physics in 1981 and a D.Sc. by publication in 2008 from Durham University. He is Emeritus Professor of Computer Vision in the Department of Computer Science at the University of York, and Adjunct Professor and Principal Investigator of the Beijing Innovation Centre for Big Data and Brain Computing at Beihang University.*

*He commenced his research career in the field of high energy nuclear physics, working on bubble chamber experiments performed at CERN and SLAC between 1977 and 1984. In 1985 he changed fields to work in computer science, and currently undertakes research in the use of graph-based methods in computer vision, pattern recognition and complex networks. He focuses on how pattern recognition and machine learning can be performed using data in the form of graphs, trees and strings. He is best known for his work on graph matching and spectral graph theory. He also works on*

*continued on [next page...](#)*

*Editor's note:*

*Prof. Hancock received the 2018 Pierre Devijver Award and presented his award lecture entitled "There and Back Again" at S+SSPR 2018 in Beijing, China.*

*For this feature article, the IAPR Newsletter asked Prof. Hancock to reflect on receiving this prestigious award.*

*Please also see:*

- *The University of York's "The York Research Database" [web page for Prof. Hancock](#).*
- *Description of the [Pierre Devijver Award](#) at the IAPR website.*
- *Presentation slides from Prof. Hancock's award lecture at S+SSPR 2018, ["There and back again"](#).*
- *The [S+SSPR 2018](#) meeting report in this issue.*

*~ Jing Dong, IAPR Newsletter EiC*

Receiving the Pierre Devijver Award was not only a singular honour, but also a chance to reflect on my own scientific career and how it developed. In fact Pierre was one of the formative influences when I commenced working in the field of pattern recognition in the mid 1980's, and so the award felt particularly apposite. But more of Pierre later.

I entitled the talk "There and back again", not because I wanted to make allusions to the world of Hobbits, and although I am not very tall there are no dragons, magic swords or elves involved (as far as I know). Instead it was a reference to the work I have done on network commute times and also to my intellectual journey which started in physics and is now moving back in that direction.

This journey began when my interest in science was ignited as a teenager. I went to a high school that was better known for literature than science—it's most famous alumnus was William Golding who won the 1983 Nobel Prize for literature. However, I was lucky to be able to use a powerful but rather elderly telescope which once belonged to the Radcliffe Observatory in Oxford. Co-incidentally, it had been built in 1860 in York by an optics engineer named Thomas Cooke, who specialized in high precision optical instrument making. What fascinated about astronomy was how it is underpinned by mathematics and physics and how these could be used to predict everything from planetary motion to the cosmological structure of the universe. I also became very interested in imaging astronomical objects.

Not surprisingly, at school my strongest subjects were physics and mathematics. When I left school, I went to study physics at Durham University. When I was an undergraduate in the 1970's, particle physics was a rapidly moving field with several

unexpected discoveries and powerful new theories being developed to explain them. For instance, in the year I commenced as an undergraduate, the J-psi (charm) was discovered at SLAC, and gauge theories were being used to predict the existence of the W, Z and Higg's bosons. So after graduating I remained at Durham to undertake a PhD on high energy nuclear physics. My supervisor was Desmond Evans, who had gained his PhD in the group of Nobel Laureate Cecil Powell at Bristol. My thesis in 1981 was on determining the angular momenta of strange particles (originally discovered by George Rochester, who was a former head of Department in Durham) using data collected with a hydrogen bubble chamber at CERN. This was a device which allowed photographs of charged particle tracks to be recorded, and their properties to be deduced from how they curved in a strong magnetic field. It did so by rapidly compressing a volume of liquid hydrogen using a vibrating piston to form tracks of tiny bubbles along the paths of charged particles. Unfortunately it was inclined to leak explosive hydrogen gas or violently disintegrate. This unpleasant habit lead to several lengthy delays in the collection of data for my PhD.

I continued to pursue particle physics with a postdoc at the UK's Rutherford Laboratory near Oxford. During this period I worked on the high resolution imaging of charmed particle decays in bubble chamber photographs. This involved periods of experimental work using the 40 inch bubble chamber at the Stanford Linear Accelerator Centre (SLAC). At the time there was something of the wild-west pioneering spirit about SLAC. The linear accelerator is a few hundred yards from the San Andreas fault line. In order to

make room for a new experiment in the "beam yard", our control room (a porta-cabin) had been sliced in half, and one half placed on stilts above the other. When we experienced minor earthquakes (and they occurred every week or so) the top half wobbled violently from side to side, while everything else was firmly attached to the North American tectonic plate.

My time in high energy physics introduced me to a number pattern recognition problems. In particular, I routinely used photogrammetric algorithms to reconstruct particle tracks from automatic measurements of bubble chamber photographs. This was done using a primitive robotic machine called the Hough-Powell device—a mechanical brute which was powered pneumatically and hissed as it processed rolls of film using a laser to scan for tracks. We called it the Hough-Puff machine.

But particle physics was a tough field where permanent academic jobs were hard to come by, and by 1985 the W and Z bosons had been discovered and the only missing piece of the puzzle seemed to be the Higgs particle. Also, the Cold War was having knock on effects. The engineers who constructed and ran our ingenious photon beam at SLAC (formed by backscattering green laser light from the 30 GeV Stanford electron beam) had been requisitioned to work on the Strategic Defence Initiative (Ronald Regan's Star Wars programme). Instead of producing Charmed particles, it was to be used to shoot down Soviet Satellites.

Fortuitously, at this time, the generously funded Alvey programme was launched in the UK with the aim of helping the country to catch up in computing and artificial intelligence. There

*...continued from [previous page](#)*

*physics based vision, where he has focused on how to recover surface shape and surface sub-structure from information conveyed by the scattering of light and from polarisation measurements.*

*He was named Fellow of the Institute of Electrical and Electronics Engineers (IEEE) in 2016 and as a Fellow of the International Association for Pattern Recognition in 2000. He was awarded an honorary doctorate by the University of Alicante in 2015. In 2016 he was appointed Editor-in-Chief of the journal Pattern Recognition.*

*Between 2009 and 2014, he held a Royal Society Wolfson Research Merit Award. In 1991 he was awarded the Seventeenth Annual Pattern Recognition Award, for his paper titled "Discrete Relaxation", co-authored with Josef Kittler and published in the journal Pattern Recognition. The British Machine Vision Association awarded him its Distinguished Fellowship for 2016. In 2018 he received the Pierre Devijver Award from the International Association for Pattern Recognition. He was second vice-president of the International Association for Pattern Recognition (2016-2018) and IAPR Governing Board Member (2006-2016).*

were plentiful jobs for scientists happy to switch fields. I had learned a lot of useful things in physics, from how to control the size of hydrogen bubbles in our detectors to solving large systems of non-linear equations. Much of this was computational and involved imaging. So I jumped.

In what seemed a painful change in direction in 1985 (but now with no regrets), I left particle physics to take up a post working with Josef Kittler on statistical pattern recognition. This was when I met Pierre Devijver for the first time.

He was a frequent visitor to Josef's group, and First Vice-President of the IAPR. There were strong synergies between our areas of research. Josef and I were working on probabilistic approaches to relaxation labelling—trying to place relaxation labelling, a technique originally introduced by Azriel Rosenfeld, Bob Hummel and Steve Zucker, onto a more rigorous Bayesian footing. Pierre was working on labelling in Markov fields. So I learned a lot of useful things from Pierre's work and my contacts with him.

This new direction soon proved fascinating. Josef and I used our new relaxation methods for detecting and re-enforcing image structures such as edges and lines. Here relaxation labelling emulates computations likely to take place in the brain.

In 1991, I took up my current position at the University of York. Here I have had the opportunity of explore many diverse research interests with a group of highly talented colleagues, postdocs and research students. One of the main themes, developing from my work on relaxation labelling, has been the use of graphs as representational and analytical tools for structural pattern recognition. This has become very topical recently, with strong interest in the use of graph structures to represent similarity relations in complex data-sets, leading to new methods for manifold learning. And of course, you can't ignore deep learning—developing deep architectures to process graph structures is proving a challenging and rather elusive current problem.

Physics has always exerted a strong pull. Perhaps driven by my early interest in astronomical imaging, I have worked on physics-based vision for almost 20 years now. This started by

trying to develop more physically intuitive methods for shape-from-shading and has lead me into other unexpectedly interesting areas. For instance, it is not widely appreciated that when unpolarized light scatters from certain types of surfaces, it acquires a degree of polarization that not only conveys information about the geometry of the scattering surface but also its material composition and physical properties such as refractive index. Some animals have been wise to this for a long time, and the mantis shrimp has developed a vision system with channels specialized to detect variations in polarization. This allows it to detect translucent prey in the sea due to variations in refractive index.

Recently I have found myself publishing in the physics literature again. The work on graphs has allowed me to compute entropies for networks and apply this to

modelling how complex systems as diverse as the New York Stock Exchange and the brains of humans suffering from Alzheimer's disease evolve with time.

When I switched fields in 1985, I must say I felt very depressed that my ten years of training in high energy physics were time wasted. Time has proved otherwise. If I look at what has happened in Particle Physics, the Higgs boson took much longer than expected to find and cosmologists have overturned the apple cart by discovering that invisible dark matter and dark energy account for most of what is in the universe.

So even if you set out on a journey and unexpectedly find yourself back where you started, the unexpected is always more interesting than the expected and the place to which you return can be very different to when you first left.

### IAPR Then and Now...The First Governing Board

#### *IAPR Newsletter, Vol. 2 No. 2, June 1979*

Belgium	Dr. P. A. Devijver	Japan	Prof. T. Sakai Prof. J. Nagumo
Canada	Prof. M. D. Levine	Mexico	Prof. A. Guzman
Denmark	Dr. P. W. Becker	The Netherlands	Prof.dr.ir. C.J.D.M. Verhagen
Federal Republic of Germany	Prof.dr.ing. H. Kazmierczak Prof.dr.ing. H. Marko	Sweden	Prof. T. Orhuag
Finland	Prof. T. Kohonen	United Kingdom	Prof.dr. D. Rutovitz
France	Prof.dr. J.C. Simon Prof. G. Perennou	U.S.A.	Prof. M. S. Watanabe Prof. A. Rosenfeld Prof. K. S. Fu Prof. H. Freman
Italy	Prof. E. R. Cainiello		

### IAPR Then and Now

#### *IAPR Newsletter, Vol. 9 No. 2, December 1986*

##### NEWS IN BRIEF

NEW IAPR PRESIDENT The new president of IAPR is Dr Pierre Devijver of Philips Research Laboratories, Belgium. Dr Devijver has served as a member of the IAPR Executive Committee for a number of years, first as IAPR Secretary and recently as First Vice President.

# 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?

~Jing Dong, Editor -in-Chief

## Annalisa Polidori



*Annalisa Polidori has a background in Physics with a PhD from the University of Bath (UK), and experience as Post-Doc researcher at the EPFL (CH). In 2017, she joined the INLAB group of the IBFM-CNR (Italy) as a Post-Doc.*

*Editor's note:*

*Annalisa Polidori won the [Essay Competition](#) at the 2018 International Computer Vision Summer School: Computer Vision after Deep Learning ([ICVSS 2018](#)). In the photo above, she is receiving her award at the summer school.*

*~ Jing Dong, IAPR Newsletter EiC*

by Annalisa Polidori, Post-Doc at Laboratorio Innovazione e Integrazione in Imaging Molecolare (INLAB), Istituto di Bioimmagini e Fisiologia Molecolare (IBFM)-Consiglio Nazionale delle Ricerche (CNR), Segrate, Italy

### ***How did you get involved in pattern recognition?***

A couple of years ago I got my PhD in Physics. After this experience in fundamental research, I wanted to move towards a new discipline that could give me the chance to make an impact on real-world challenges, possibly with a short-term output with respect to the typical time-scales of fundamental science. Having this in mind, I took the chance of joining the INLAB group of the IBFM-CNR (Italy). The main expertise of the group is in medical imaging, with a focus on neurodegenerative diseases and Alzheimer Disease (AD) in particular, one of the most common forms of dementia for which no cure yet exists. Once I joined the group, I thought this was the right place for me to be. In addition, I found that working on images by using advanced algorithms based on machine learning was an interesting step for developing new data analysis skills. This, in short, is how I landed to the world of pattern recognition.

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

When I joined the group, the team focus was on the development of a machine-learning (ML) algorithm for the early diagnosis of AD.

As some of you may already know, one of the main challenges in predicting AD is that its early phase is known as Mild Cognitive Impairment (MCI), but only 33% of subjects with MCI progress to AD. Unfortunately, the current criteria for clinical diagnosis of AD are insufficient for its early detection. Therefore, clinical trials enroll patients with early dementia forms that are not caused by AD, and studies last several years prior to being completed, when

most of the enrolled subjects have clearly progressed to AD. This leads to confounding clinical-trial designs and causes treatments to be administered on patients who are not really affected by AD. The outcome is a bottleneck for developing cures and an enormous waste of money.

In this context, Artificial Intelligence (AI) based technologies are emerging as effective tools for automatic, objective and more sensitive assessment of imaging studies. In the last 15 years, machine learning and pattern-recognition techniques have captured the attention of the neuroimaging community, as they have been proven able to discover previously unknown patterns in imaging data. This information can then be used to design multivariate mathematical models able to automatically predict the diagnostic class of a subject. This characteristic may be of particular usefulness in the context of early diagnosis, when pathological signs are not yet evident by visual inspection. In the last years, different ML approaches have been applied to the automatic diagnosis and prognosis of AD by means of cerebral MRI studies, showing good performance even at an early stage of the disease. Furthermore, hidden image features extracted by ML have been associated to diagnostic biomarkers, so that these can be more easily interpreted by clinicians and associated to AD

pathogenesis. Recent results obtained by our group show that, by combining MRI brain studies with specific neuropsychological measures, a SVM classifier reach 85% accuracy, 83% sensitivity, and 87% specificity in the ability to predict conversion of MCI to AD up to 24 months before the definite diagnosis.

Our group's achievement has been recognized as a crucial breakthrough for fighting AD and for paving the way to future diagnostic and preventive medicine based on AI. In particular, the technology transfer of this research output into clinical practice could be significant in terms of patients' health, effectiveness of clinical trials, and social costs.

Our aim is to develop methods to automatically perform early diagnosis and predict progression of MCI to AD by analyzing radiological images of the brain (combined with neuropsychological tests) in a fully automatic way. We believe that artificial intelligence has the potential to revolutionize the diagnostic and therapeutic approach to dementia—and especially the design of clinical trials—by anticipating the provision of optimal treatments to AD patients, in order to maintain their quality of life for as long as possible.

#### ***How can the IAPR help young researchers?***

During last summer, I attended the ICVSS (International

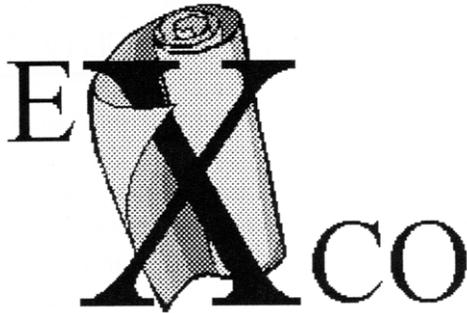
Computer Vision Summer School) in Sicily. What I found great, besides the lectures and the location, was the idea of the organizers to propose a Reading Group. For each group of students, we had two senior scientists as mentors. They suggested some papers that were particularly inspiring during their careers. The idea was to help us to dig into the field of Computer Vision and not just follow main trends on specific topics. I appreciated this idea, and especially the fact that, after reading the papers, the conversations we had with the mentors ended up to be broader than just the topics of the papers. We had the chance to ask questions about the mentors' career paths, discuss their views on AI and ask for suggestions on how to handle important choices, such as how to pick an interesting scientific topic. It was very interesting for me to exchange with someone more experienced, who had a broader perspective on the field, and who was willing to share some nuggets of wisdom.

I think that everyone should find a mentor for their own career path. However, promoting occasions during conferences or schools, like the one I described, could be very inspiring for young researchers.



From the

# News from the Executive Committee of the IAPR



by [Arjan Kuijper](#) (Germany)  
IAPR Secretary



## 2018-2020

### IAPR Executive Committee



**Apostolos Antonacopoulos**  
President

University of Salford  
UK



**Alexandra Branzan Albu**  
1st Vice-President

University of Victoria  
Canada



**Lale Akarun**  
2nd Vice-President

Bogazici University  
Turkey



**Daniel Lopresti**  
Treasurer

Lehigh University  
USA



**Arjan Kuijper**  
Secretary

Fraunhofer IGD  
Germany



**Simone Marinai**  
Past President

University of Florence  
Italy

It doesn't seem so strange for me to be writing something for the *IAPR Newsletter*, it's just a switch from "From the Editor's Desk" to "From the ExCo".

I've had many years in which I could see the broad spectrum of activities and research done by so many people in the IAPR and its committees. However, the few months on the ExCo since ICPR 2018 broadened my scope even more. The IAPR is a cool organisation, and I'm proud to be able to serve it!

ICPR 2018 seems a long time ago now, with many of us back to our responsibilities in academia or industry. I feel introductions are in order as the first official task for this first "From the ExCo" column. Your new ExCo appears to the left.

In addition to a new ExCo, with the biennial meeting of the full Governing Board at the ICPR, a new term begins for most of the IAPR's Standing and Technical Committees. The new ExCo has a particularly busy time in the first months after ICPR to select and appoint new Standing Committee (SC) members and Technical Committee (TC) Chairs.

For the 2018-2020 term, this process is nearly complete and the new Committees will soon be posted at the IAPR website (<https://iapr.org/committees/committees.php?id=5> and <https://iapr.org/committees/committees.php?id=6>), but it's never too early to plan for your future.

The first step would be to join a TC—this is the place where you can share and discuss your research with peers. The SCs are more tailored towards specific IAPR organisational themes. These committees are an excellent way to get involved with the IAPR. Interested? You can let the IAPR know in an email to the IAPR Secretariat, Linda O'Gorman, [secretariat@iapr.org](mailto:secretariat@iapr.org).

As the former *IAPR Newsletter* Editor-in-Chief, I take special pleasure in welcoming Jing Dong as the new EiC. As always, this issue of the *Newsletter* has lots to read in, and there are many opportunities for you to contribute. Please share your ideas with Jing [jdong@nlpr.ia.ac.cn](mailto:jdong@nlpr.ia.ac.cn). And, if you haven't already done so, please read her first "From the Editor's Desk" on the [cover of this issue](#).

On behalf of the rest of the IAPR Executive Committee (ExCo), I'd like to take this opportunity to wish you a very happy, healthy and productive 2019.

*Arjan*

### Current topics of IAPR Technical Committees:

01-Statistical Pattern Recognition Techniques;  
02-Structural & Syntactical Pattern Recognition;  
03-Neural Networks & Computational Intelligence;  
04-Biometrics; 05-Computer Vision for Underwater Environmental Monitoring;  
06-Computational Forensics; 07-Remote Sensing and Mapping; 08-Machine Vision Applications;  
09-Pattern Recognition in Human-Machine Interaction; 10-Graphics Recognition;  
11-Reading Systems; 12-Multimedia and Visual Information Systems; 14-Signal Analysis for Machine Intelligence; 15-Graph Based Representations; 16-Algebraic and Discrete Mathematical Techniques in Pattern Recognition & Image Analysis; 18-Discrete Geometry and Mathematical Morphology; 19-Computer Vision for Cultural Heritage Applications; 20-Pattern Recognition for Bioinformatics

# IAPR Technical Committee News

This section the IAPR Newsletter publishes 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.

~Jing Dong, IAPR Newsletter EiC

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[TC10 Graphics Recognition](#)

[TC12 Multimedia and Visual Information Systems](#)

## IAPR TC3 Neural Networks & Computational Intelligence

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

**Edmondo Trentin, Chair**

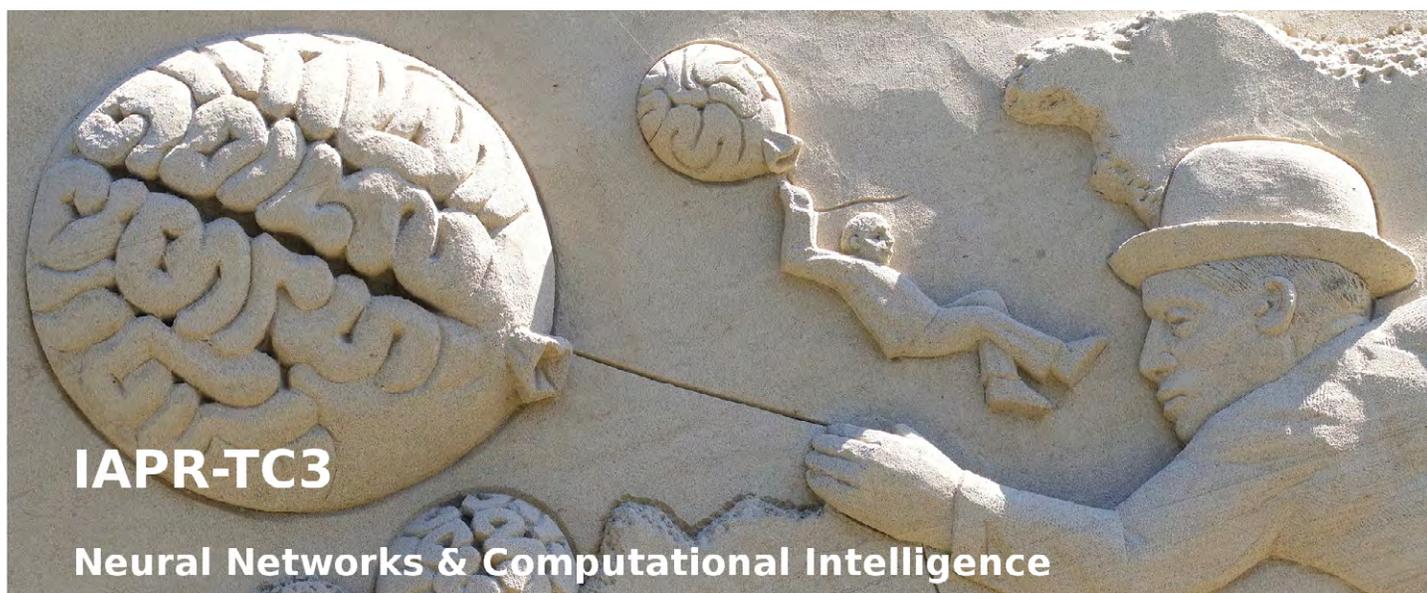
**Markus Hagenbuchner, Vice Chair**

The 8th edition of our biennial Workshop on Artificial Neural Networks in Pattern Recognition ([ANNPR 2018](#)) was successfully held at DIISM, in the picturesque medieval city of Siena (Tuscany, Italy), on September 19-21, 2018. All the details can be found on the ANNPR 2018 website (<https://iapr.org/archives/annpr2018/index.html>). A detailed report of the event will be published in a forthcoming issue of the *IAPR Newsletter* in the "Meeting Reports - Conferences, Workshops & Summer Schools" section.

A call for bids to host ANNPR 2020 has been issued via the TC3 mailing list. Proposals will be evaluated shortly by the TC3 Leadership Board. Feel free to bid!

We invite you to check out our website at <http://iapr-tc3.diism.unisi.it/index.html>, where you can learn about TC3, access new resources, and possibly join us.

At <http://iapr-tc3.diism.unisi.it/Research.html>, in particular, you can find our Manifesto on "off-the-mainstream" research.



# More IAPR Technical Committee News

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## IAPR TC6 Computational Forensics

<https://sites.google.com/site/compforgroup/>

Jean-Marc Ogier, Chair

Chang-Tsun Li, Vice Chair

### Objectives :

IAPR TC6 aims at providing leadership in the multi-disciplinary domain of Computational Forensics (CF). Emphasis is given to research, development, and educational activities within CF that focus on the analysis and recognition of pattern evidence. CF is a research domain that concerns the investigation of forensic problems using computational methods. The primary goal is the discovery and the advancement of forensic knowledge. CF involves modeling, computer simulation, computer-based analysis and recognition in studying and solving forensic problems.

Since its creation, the group promotes exchange and research in the field of Computational Forensics, mainly through:

- International forum, the IWCF workshops, to peer-review and exchange research results
- Performance evaluation, benchmarking and standardization of algorithms and computational procedures
- Resources in forms of data sets, software tools, and specifications e.g. data formats and system interfaces
- Education and training to prepare current and future researchers and practitioners
- Sources of information on events, related activities and financing opportunities

The website is reachable at the following address : <https://sites.google.com/site/compforgroup/>

### Past activities :

During the last ICPR 2018, held in Beijing last August, we organized a workshop dedicated to computational document forensics (please see report on IWCF 2018 in the [ICPR 2018 Special Issue of the IAPR Newsletter](#)). It gathered around 40 participants, with a very nice panel discussion crossing seniors view on document forensics questions.

Two keynote speakers gave some very nice talks, from both academic and industrial points of view. This workshop was associated to a competition dealing with fraud detection in documents

### Future activities :

We are planning the organization of the 7th IAPR International Workshop on Biometrics and Forensics - [IWBF2019](#), which will be held in Cancun, Mexico, in May 2019.

All the information related to this workshop can be found at: <https://iapr.org/iwbf2019>.

Furthermore, another workshop will be organized as a satellite of the next ICDAR conference, that will be held in Sydney, in 2019 September. Under the umbrella of TC6 and TC 11 of the IAPR, this workshop will deal with computational forensics for document.

### Contact:

If you are interested in the activities of TC6 or if you want to join the TC's mailing list please contact Jean-Marc Ogier, [Jean-marc.ogier@univ-lr.fr](mailto:Jean-marc.ogier@univ-lr.fr).



## IN THIS ISSUE:

[TC3 Neural Networks & Computational Intelligence](#)[TC6 Computational Forensics](#)[TC7 Remote Sensing and Mapping](#)[TC10 Graphics Recognition](#)[TC12 Multimedia and Visual Information Systems](#)**IAPR TC7 - Remote Sensing and Mapping**<http://iapr-tc7.ipb.uni-bonn.de/>**Jie Shan, Chair****Ribana Roscher, Vice Chair**

TC7 promotes the development and application of pattern recognition methods for the analysis of Earth observation data collected from space, air and ground, and fosters academic collaboration and networking among related communities.

TC7 hosted the 10th Workshop on Pattern Recognition in Remote Sensing on August 19 and 20 in Beijing, China. Over 180 people attended this two-day event. The peer reviewed proceedings can be found at <https://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=8476691>.

During ICPR 2018, a new TC7 leadership team was formed with Jie Shan as Chair, Ribana Roscher as Vice-Chair and Eckart Michaelsen as Past Chair. TC7 has a new face/webpage: <http://iapr-tc7.ipb.uni-bonn.de/> and is beginning to plan the PRRS workshop to be held in conjunction with ICPR 2020.

**IAPR TC10 - Graphics Recognition**<http://iapr-tc10.univ-lr.fr/>**Alicia Fornés, Chair****Jean-Christophe Burie, Vice Chair**

The IAPR's Technical Committee 10 on Graphics Recognition promotes interaction among researchers working in Graphics Recognition (GR). GR is an exciting field of pattern recognition, whose main relevant topics of interest include: the analysis and interpretation of graphical documents (e.g. engineering drawings, floorplans, mathematical expressions, comics, maps, music scores, patents, diagrams, charts, tables, etc.), graphics-based information retrieval and indexing, 3-D models from multiple 2-D views (line drawings), graphics recognition in born digital documents, graphics detection and recognition in real scenes, sketch recognition and understanding, analysis of graphics on new digital interfaces, etc.

**GREC 2019**  
FIRST ANNOUNCEMENT

The GREC workshops provide an excellent opportunity for researchers and practitioners at all levels of experience to meet colleagues and to share new ideas and knowledge about graphics recognition methods. The aim of this workshop is to maintain a very high level of interaction and creative discussions between participants, maintaining a "workshop" spirit, and not being tempted by a "mini-conference" model.

[GREC 2019](#) will be held in September 20-21, 2019 (Sydney, Australia), in conjunction with [ICDAR 2019](#). Three special sessions will focus on: Music Scores Recognition, Comics Analysis and Understanding, and Sketch Recognition and Understanding. We encourage authors to submit papers on these topics, but papers on other GR topics are also welcome.

For more information, including the subscription to our mailing list, please visit: <http://iapr-tc10.univ-lr.fr/>.

And still  
More

# IAPR Technical Committee News

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## IAPR TC12 Multimedia and Visual Information Systems

<http://iapr-tc12.info>

**Sergio Escalera, Chair**

**Henning Müller and Martha Larson, Vice Chairs**

**Hugo Jair Escalante, Information Officer**

IAPR TC12 is endorsing and co-organizing a [workshop and challenge on Face anti-spoofing detection](#) collocated with [CVPR 2019](#). The workshop will receive submissions in all topics associated with the detection of spoofing attacks in visual information, with emphasis on methods that take advantage of multimodal information. Authors of accepted papers will be invited to present their work at the workshop in Long Beach, CA, USA, in June 2019. The workshop has an associated competition in which participants have to develop automated methods for detecting spoofing attacks in videos. A novel data set with a variety of attacks is being released with this challenge. Prizes sponsored by Baidu Research will be delivered to top ranked participants during the awards ceremony. This is a great opportunity to try your skills in facial biometrics analysis on data from a real application. Looking forward seeing you in Long Beach this summer!

# CVPR 2019



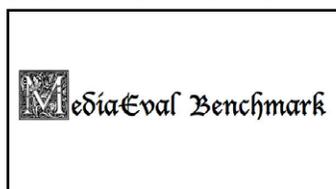
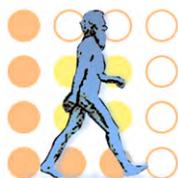
IAPR TC12 is happy to announce the publication of a new volume in the Springer Series on Challenges in Machine Learning on [Explainable and Interpretable Models in Computer Vision and Machine Learning](#). This is the first compiled volume in a quite relevant topic that aims at empowering AI with explanatory mechanisms. The book is associated with previous events endorsed by the IAPR TC committee. Likewise, the volume on [NIPS2017 competitions](#) is now available! It compiles the best from the competition program from the NIPS 2017 conference (now NeurIPS).



IAPR TC12 invites potential authors to submit their work to the [Special Issue on Looking At People: Analyzing Human Behavior from Social Media Data](#) of the International Journal of Computer Vision. This issue aims to compile the latest efforts on multimodal approaches to analyze unconscious behaviors, including personality and deception, and it is a follow up of a challenge and workshop organized at ICPR2018. The deadline for submission is mid march, 2019.

We also invite potential authors to consider submitting their work the [Special Issue on Image and Video Inpainting and Denoising](#) of IEEE Transactions on Pattern Analysis and Machine Intelligence. All aspects of visual inpainting and denoising are of interest for this issue. The **deadline for submission is February 15, 2019**.

The ImageCLEF 2019 campaign is now open for participants and several tasks have already made the data available. Besides three medical tasks there is a lifelogging task, a steganography/security task, and a coral image analysis task. Experiments are run on the crowdAI platform. Deadline for most tasks is in May. Most tasks combine machine learning and image analysis aspects.



# Meeting Reports

## Conferences, Workshops & Summer Schools



### Second Mediterranean Conference on Pattern Recognition and Artificial Intelligence

Rabat, Morocco  
March 27-28, 2018

<https://medprai2018.sciencesconf.org>

#### General Chairs:

Mohammed El Youssef El Kettani, Ibn Tofail University, Morocco  
[Chawki Djeddi](#), Larbi Tebessi University, Algeria.

#### Program Chairs:

[Sankar Kumar Pal](#), Indian Statistical Institute, India.  
Haikal El Abed, Technical Trainers College, German International Cooperation, Lebanon.  
[Imran Siddiqi](#), Bahria University, Pakistan

by Chawki Djeddi, General Co-Chair

**Introduction:** The Mediterranean Conference on Pattern Recognition and Artificial Intelligence (MedPRAI) is an international conference that aims to provide an interdisciplinary forum for discussions on recent advancements in different areas of pattern recognition and artificial intelligence. This report presents different statistics of the conference, details on the review process, information on invited talks and awards and finally announces the location of the next edition of MedPRAI.

**Submission Statistics:** A total of 58 papers were submitted to the conference. Out of these, 02 were removed by the program committee for incomplete submissions reasons. Finally, a

total of 56 papers were assigned to renowned researchers in Pattern Recognition and Artificial Intelligence for comments and feedback. After a thorough and competitive paper review and selection process, 23 papers were accepted for presentation at the conference. These statistics are summarized in Table 1.

**Table 1.**  
MedPRAI 2018 Submission Statistics

Total number of initial submissions	58
Number of submissions selected for review	56
Number of accepted papers	23
Number of rejected papers	33
Acceptance rate	41%
Minimum reviews per paper	3

**Review Process:** As a function of the expertise of the program committee members and taking into account potential conflicts of

interest, papers were assigned for review. The reviewers were required to provide quantitative scores as well as supporting comments justifying the assigned scores. In addition to the standard parameters of 'Overall Score' and 'Reviewer's Confidence', each paper was required to be scored for: Novelty, Importance to the field, References to prior work, Organization and Clarity, Technical soundness, and Experimental validation. Each paper was reviewed by a minimum of three domain experts. For each paper scores from different reviewers were averaged and a final ranking of papers was produced. Moreover, prior to the final decision, the subjective comments of the reviewers were also analyzed to take into account any important information provided by the reviewer(s).

It is also worth mentioning that before making a final decision, papers were also checked for text similarity matches using the online tool 'Turnitin'. The report generated for each paper was analyzed to discriminate between accidental matches and direct 'copy+paste' of paragraphs from other sources. Papers with significant text matches were rejected.

Given the evaluation form, the scores of papers may vary from -3 (strong reject) to +3 (strong accept). In our case, we only accepted papers with a cumulative score of greater than or equal to zero and at least two positive scores. Moreover, papers with high text similarity with other sources were not accepted even if they had high scores in evaluation.

**Conference Statistics:** A total of 23 high quality submissions were accepted for presentation and publication in MedPRAI 2018. Out of these, we received the camera ready versions of 21 papers. All the first authors of the accepted papers (18 authors) were registered and presented their works at the conference.

**Table 2.**

Accepted papers according to the country of the first author

Country	Number of accepted papers
Morocco	7
Algeria	3
France	2
India	2
Pakistan	2
Bahrain	1
Canada	1
United States	1
Romania	1
Tunisia	1

The conference was attended by the first authors of the accepted papers, as well as professors and researchers. The total number of

participants was 28 persons who are distributed as the following:

- 18 authors (including 3 authors with two papers),
- 5 members of the organizing committee,
- 2 Keynote speakers,
- 3 professors as guest of honor

**Invited Talks:** Two keynote talks were delivered at the conference. The first talk titled "**The Need for 'Cultural' Machine Translation – Challenges and Solutions**" was delivered by Dr. Fernand S. Cohen, Director of the Imaging and Computer Vision Center, Drexel University, Philadelphia, USA. The second talk was about "**Co-clustering for Data Science**" and presented by Dr. Mohamed Nadif, University Paris Descartes, France. The [biography of the keynote speakers and the abstract of the talks](#) have been made available on the conference website.

**IAPR Awards:** Two awards were announced at the conference. These include "IAPR Best Paper Award" and "IAPR Best Student Paper Award".

The "IAPR Best Paper Award" was presented to Ali Mirza, Marium Fayyaz, Zunera Seher and Imran Siddiqi for the paper entitled "Urdu Caption Text Detection using Textural Features".

The "IAPR Best Student Paper Award" was presented to Praneeth Susarla, Utkarsh Agrawal and Dinesh Babu Jayagopi for the paper entitled "Human Weapon-Activity Recognition in Surveillance Videos Using Structural-RNN".

The members of the awards selection committee were:

- Mohammed El Youssfi El Kettani, Ibn Tofail University, Morocco.
- Mohamed Nadif, University Paris Descartes, France.

- Mohammed Khalil, FST Mohammedia, Morocco.
- Yaâcoub Hannad, Ibn Tofail University, Morocco.

## Conference Proceedings

MedPRAI 2018 Proceedings are available through the



<https://dl.acm.org/citation.cfm?id=3177148>

**Next Edition of MedPRAI:** The third edition of MedPRAI will be held in December 2019 in Istanbul, Turkey. Prof. Tolga Ensari from Istanbul University (Turkey) is the focal person of the next edition of MedPRAI.

**Concluding Remarks:** The organizers of MedPRAI would like to take this opportunity to thank the International Association of Pattern Recognition (IAPR) for supporting the conference and advertising it in the list of IAPR conferences. We look forward to the same support for the third edition of MedPRAI as well.



**MedPRAI 2019**  
22-24 December 2019  
Istanbul, Turkey

<https://medprai2019.sciencesconf.org/>



# 6th IAPR/IEEE International Workshop on Biometrics and Forensics

Sassari, Italy

June 7-8, 2018

<http://iwbf2018.uniss.it/>

## General Chairs:

Massimo Tistarelli, UNISS  
Pong Chi Yuen, HKBU  
Jean-Luc Dugelay, EURECOM

## Program Chairs:

Simona Francese, Sheffield  
Anderson Rocha, Unicamp  
Richa Singh, IIITD

by Massimo Tistarelli

IWBF 2018 was the 6th edition of a well established scientific workshop started in 2012 to foster research to bridge Biometrics and Forensic Science. The workshop was technically co-sponsored by the IAPR and IEEE and co-organized by the EU RISE project IDENTITY.

The workshop was held back-to-back with the 15th edition of the International Summer School on Biometrics, which took place in Alghero the following week [see SSB 20118 report in [IAPR Newsletter 40:3](#)]. The workshop series on Biometrics and Forensics is the premier international forum for research in the design and application of advanced biometric technologies for forensic science.

The IWBF series is specifically devoted to facilitating synergies in Forensic Biometrics research in areas such as biometrics, forensic science, surveillance, and multimedia forensics. IWBF attracts participants from industry, research, academia and end-users.

About 30 participants attended IWBF 2018 and participated in

stimulating discussions, after each of the talks and during the breaks. The workshop program was populated by 20 scientific and peer-reviewed papers presenting several emerging issues related to forensic biometrics. The program had four oral sessions, two invited talks and one poster session.

The oral sessions were based on Biometrics and Forensics and Security.

Biometrics papers presented:

- What Can a Single Minutia Tell About Gender? by Philipp Terhörst, Naser Damer, Andreas Braun, Arjan Kuijper
- Solving the Face Growth Problem in the Biometric Face Recognition Using Photo-Anthropometric Ratios by Iris Normalization by Gustavo Carneiro Bicalho, Marcelo Cobias Amorim Alves, Lucas Porto, Carlos Eduardo Palhares Machado, Flavio Vidal
- Transgender Face Recognition with Off-the-shelf Pre-trained CNNs: A Comprehensive Study by Raghavendra Ramachandra, Sushma Venkatesh, Kiran Raja, Christoph Busch
- Performance Variation

of Morphed Face Image Detection Algorithms across Different Datasets by Ulrich Scherhag, Christian Rathgeb, Christoph Busch

- Using a Generic Model for Codebook-based Gait Recognition Algorithms by Muhamamd Hassan Khan, Muhammad Shahid Farid, Marcin Grzegorzek
- Data-Driven Segmentation of Post-Mortem Iris Images by Mateusz Trokielewicz, Adam Czajka
- Contactless 3D Fingerprint Identification without 3D Reconstruction by Qian Zheng, Ajay Kumar, Gang Pan
- Unconstrained Biometric Recognition based on Thermal Hand Images by Ewelina Bartuzi, Katarzyna Michowska, Adam Czajka

Forensics and Security papers presented:

- PRNU-based Detection of Morphed Face Images by Luca Debiasi, Ulrich Scherhag, Christian Rathgeb, Andreas Uhl, Christoph Busch
- Impact of Photometric Transformations on PRNU Estimation Schemes: A Case Study Using Near Infrared

- Ocular Images by Sudipta Banerjee, Arun Ross
- Efficient Iris Sample Data Protection using Selective JPEG2000 Encryption of Normalised Texture by Martin Rieger, Jutta Hämmerle-Uhl, Andreas Uhl
- Fusion Using Neural Networks for Intoxication Identification by Georgia Koukiou, Vassilis Anastassopoulos
- Have you Permission to Answer this Phone? by Silvio Barra, Aniello Castiglione, Maria De Marsico, Gianni Fenu, Michele Nappi
- Detection of Adaptive Histogram Equalization Robust Against JPEG Compression by Ehsan Nowroozi, Benedetta Tondi, Mauro Barni
- Use of Creative Materials for Fingerprint Spoofs by Ondřej Kanich, Martin Mézl, Martin Dražanský

Poster Session papers were:

- Fast Cross-Correlation based Wrist Vein Recognition Algorithm with Rotation and Translation Compensation by Olegs Nikisins, Teodors Eglitis, André Anjos, Suisse; Sebastien Marcel
- Face Recognition “On the Move” Combining Incomplete Information by Souad Khellat-Kihel, Andrea Lagorio, Massimo Tistarelli
- Learning Structured Sparse Representation for Single Sample Face Recognition by Fan Liu
- Supervised Hashing for Retrieval of Multimodal Biometric data by T A Sumesh, Vinay Namboodiri, Phalguni Gupta
- Age and Gender Classification from Ear Images by Fevziye Eyiokur, Dogucan Yaman, Nurdan Sezgin, Hazim Ekenel

The two invited talks covered different issues related to forensic biometrics.

The first invited talk, entitled “**Face Analysis for Forensic Cases**”, was delivered by Dr Giovanni Tessitore, from Polizia di Stato in Italy. The speaker explained how Forensic Facial Image Comparison (FIC) is currently a subjective evaluation made by a forensic specialist in order to assess the correspondence between two given facial images, one of a known person (suspected) and the other of an unknown person. The forensic specialist should subjectively and empirically estimate the strength-of-evidence of two opposite hypothesis (on the basis of the observed similarities/dissimilarity): the accusatory hypothesis – the two photos belong to the same person; the defensive hypothesis – the two photos belong to different people. Despite a lot of work that has been recently done in order to standardize the methodology applied by experts (morphological approach with the use of a checklist of features), FIC still remains a subjective evaluation. Automatic Facial Recognition Systems (AFRS) could be used, in principle, to obtain an objective evaluation instead. However scores obtained with AFRS have no meaning in a forensic scenario where results should always be expressed in terms of strength-of-evidence. At such purpose the problem of estimation of likelihood-ratio for the scores resulting from AFRS in the Bayesian Framework will be introduced together with the related evaluation procedure, in which standard ROC or DET curves are replaced by the log-likelihood-ratio cost (Cllr).

The second invited talk, entitled “**Biometrics, Forensics and Identity Science**”, was delivered

by Prof. Mark Nixon from University of Southampton in UK. The main question addressed was whether biometrics can be used in forensics. There have been a number of studies in this area already, and his main focus is on biometrics that can be used for identification in surveillance video. There are now papers which show that the human body can offer better identification performance than the face. This is not reflected in current practice and direction. The speaker first introduced a view of biometrics and forensic identification. Then he presented case studies on gait and ear identification. He also described the use of semantics for identification before presenting conclusions and recommendations for future work. Prof. Nixon argued that biometrics can indeed be used in forensics, but that development should be directed by biometric performance rather than by notions of human perception.

IWBF Proceedings  
are available through

IEEE Xplore®  
Digital Library

@

<https://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=8394763>



**9th International Conference on Pattern Recognition Systems (ICPRS-18)  
Valparaíso, Chile, 22-24 May 2018**

**Organizers:**

[Héctor Allende-Cid](#) (Pontificia Universidad Católica de Valparaíso, Chile) - Local Chair

Sergio Velastin Universidad Carlos III de Madrid, Spain - General Chair

[Marcelo Mendoza](#) (Universidad Técnica Federico Santa María, Chile) - AChiRP Chair

[Marco Mora](#) (Universidad Católica del Maule, Chile) - Tutorials Chair

[José Delpiano](#) (Universidad de los Andes, Chile) - Session Chair

by Héctor Allende-Cid

The International Conference on Pattern Recognition Systems (ICPRS) is an annual event that follows ICPRS-17 and ICPRS-16, a continuation of the successful Chilean Conference on Pattern Recognition (CCPR) that reached its 6th edition in 2014.

In 2018, it was organised by the Pontificia Universidad Católica de Valparaíso (Chile), the Chilean Association for Pattern Recognition (ACHiRP, a member of the IAPR) and Universidad Carlos III de Madrid (Spain), endorsed by the International Association for Pattern Recognition (IAPR) and sponsored by the Vision and Imaging Professional Network of the Institution of Engineering and Technology (IET) who published its proceedings.

Papers deemed to be of the required standard were presented at the conference, will be indexed by INSPEC and, through it, normally by IEEE Xplore and Scopus.

ICPRS 2018 aimed to create an important networking forum for participants to discuss the present

and future of pattern recognition systems. Its predecessors ICPRS-17, ICPRS-16, CWPR and CCPR, have traditionally been a meeting point of different disciplines (computer science, engineering, mathematics, etc.) and an opportunity for a wide range of researchers and practitioners to discuss the many different aspects of the application of pattern recognition technologies.

**Statistics:** ICPRS received 34 contributions from 10 countries. After a rigorous blind reviewing process, where each paper was reviewed by at least 3 experts, a total of 17 papers were accepted. All the accepted papers have scientific quality above the overall mean rating.

**Keynotes and Tutorials:** The conference was enriched with the contribution of four keynote speakers and one tutorial speaker:

- K1: *Introduction to Word Embedding Models*, Prof. John Atkinson, Faculty of Engineering and Sciences, Universidad Adolfo Ibañez (UAI), Chile
- K2: *X-ray Computer Vision*

*for Baggage Inspection*, Prof. Domingo Mery, Pontificia Universidad Católica de Chile

- K3: *Applications of vector-valued image processing in brain imaging*, Prof. Clovis Tauber, Université de Tours, France
- K4: *Some applications of computer vision in transport engineering*, Prof. Sergio A Velastin, Applied Artificial Intelligence Research Group, Universidad Carlos III de Madrid, Spain and Queen Mary University of London, UK
- T1: *GPU programming*, Ricardo J. Barrientos. LITRP Laboratory, Catholic University of Maule, Chile

**Awards:** The ICPRS Best Paper Award was given to Rundong Wang, Yuancheng Wang, Yuhao Zhang, Qiao Wang for the paper entitled “3D Multi-Scale Convolution Nets for Pulmonary Nodule Detection”. This award acknowledges and encourages excellence, originality and innovativeness of new models, methods and techniques with an outstanding theoretical contribution

and practical application to the field of Pattern Recognition and/ or Data Mining. Also an Honorary Mention was awarded to Mathieu Belloc, Sergio A Velastin, Rodrigo Fernandez, Miguel Angel Jara, for the paper entitled “*Detection of People Boarding/Alighting a Metropolitan Train using Computer Vision*”.

**Organization:** The conference was organized by Dr. Héctor Allende-Cid (Local Chair) together with Prof. Sergio A Velastin (General Chair), Dr. Marcelo Mendoza (ACHIRP chair), and Dr. Marco Mora (Tutorials Chair). The Local Organization was co-ordinated by Pontificia Universidad Católica de Valparaíso, Chile and Universidad Carlos III de

Madrid, Spain. The conference was endorsed by the International Association for Pattern Recognition (IAPR), the Institution of Engineering and Technology (IET), UK, and the Chilean Association of Pattern Recognition.

**Social Program:** The optional Social Program consisted in a Welcome Cocktail Reception on the first day of the conference and a Dinner at the Ankara Hotel Restaurant the second day. It was an opportunity to meet with colleagues from other countries in an informal and relaxed atmosphere.

**Conclusion:** The conference was a very useful forum in which the scientific community could

exchange research experience, share new knowledge and foster cooperation among research groups in pattern recognition and related areas.

In 2019, the 10th International Conference of Pattern Recognition Systems will be held in Tours, France, organized by Dr. Clovis Tauber, from the Université de Tours, France.

ICPRS 2018 Proceedings were published by

**IET** Digital Library

<https://digital-library.theiet.org/content/conferences/cp745>



ICPRS 2018 participants

**ICPRS2019** International Conference on Pattern Recognition Systems 8-10 July 2019, Tours (France)

**IET** The Institution of Engineering and Technology **ACHIRP**



# [MCPR 2018](#) **10th Mexican Conference on Pattern Recognition**

Puebla, Mexico  
June 27-30, 2018

<https://ccc.inaoep.mx/~mcpr2018/>

Honorary Chair:

[Sudep Sarkar](#) (University of South Florida, USA)

General Chairs:

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

[Jose Francisco Martinez-Trinidad](#) (INAOE, Puebla, Mexico)

[Jose Arturo Olvera-Lozez](#) (BUAP, Puebla, Mexico)

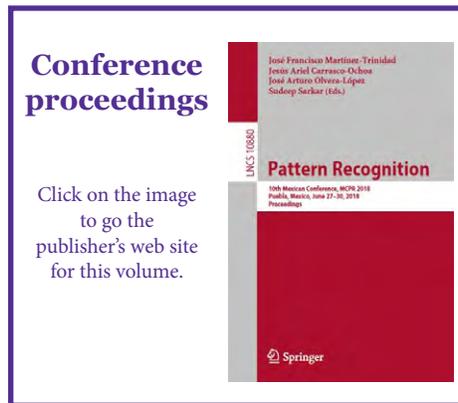
by the Chairs

The 10th Mexican Conference on Pattern Recognition (MCPR 2018) was organized by the Computer Science Department of the National Institute for Astrophysics Optics and Electronics (INAOE). MCPR 2018 was sponsored by the Mexican Association for Computer Vision, Neural Computing and Robotics (MACVNR) and the International Association for Pattern Recognition (IAPR).

MCPR 2018 received contributions from 9 countries. In total 44 papers were submitted, out of which 29 were accepted for publication in the MCPR 2018 proceedings and for presentation at the conference in a single track. The review process was carried out by the Scientific Committee, which consisted of 50 outstanding researchers, all specialists of pattern recognition, who prepared an excellent selection.

The 29 accepted papers were published by Springer-Verlag in the volume Pattern Recognition, LNCS 10880, edited by Jose

Francisco Martinez-Trinidad, Jesus Ariel Carrasco-Ochoa, Jose Arturo Olvera-Lopez and Sudeep Sarkar.



The oral sessions covered the topics: Pattern Recognition Principles, Deep Learning, Neural Networks and Associative Memories, Data mining and Computer Vision.

Four professors were invited to give keynote addresses and tutorials on topics in Pattern Recognition:



Prof. Hamido Fujita,  
Faculty of Software and  
Information Science, Iwate  
Prefectural University, Japan.



Prof. Ventzeslav Valev,  
Institute of Mathematics  
and Informatics of the  
Bulgarian Academy of Sciences,  
Sofia, Bulgaria (IAPR Invited  
Speaker)



Prof. Julian Fierrez,  
School of Engineering,  
Universidad Autónoma de  
Madrid, Spain



Professor Humberto Sossa,  
Center for Computing  
Research, National  
Polytechnic Institute, Mexico

The last day of the conference the invited speakers presented enlightening tutorials on several Pattern Recognition topics.

For the sixth consecutive year, the conference included a Postgraduate Students' Meeting that allowed to the students to receive feedback from experienced researchers, while also promoting their participation in conference events. Five student papers were carefully selected to be presented at the Conference as posters and these contributions were also published as a special issue of



the journal *Research in Computing Science* edited by the National Polytechnic Institute of Mexico.

During the event, meals and the conference dinner all took place into the venue hotel.

We are sure that MCPR 2018 once again provided a forum for enhancing the collaboration between the Mexican Pattern Recognition researchers and

the broader international Pattern Recognition community.

The steering committee for the MCPR conference series decided that the 11th Mexican Conference on Pattern Recognition will be held in Queretaro, Mexico in the last week of June 2019, organized by the National Polytechnic Institute of Mexico and the Computer Science Department of the National Institute for Astrophysics Optics and Electronics of Mexico.



Honorary Chair: Jean-Marc Ogier (Laboratoire L3i, Université de la Rochelle, France)

School Chair: Jean-Christophe Burie (Laboratoire L3i, Université de la Rochelle, France)

**Topics:** The objective of the summer school was to give to new students in the field of DAR (Document Analysis and Recognition) an overview of all the traditional approaches to process and analyse documents. However, the specific focus was on new trends such as deep learning, forensics, ....

To reach this objective, the lecturers added their personal points of view to their talks by comparing traditional approaches with new ones in the context of their points of view on the future of DAR.

The school has addressed the following topics:

- Features, representation and indexing for large document

- collections
- Content representation and manipulation
- Information and document retrieval
- Machine learning for document analysis and understanding
- Scene text detection in the wild
- Document forgery and forensics
- Graphic content indexing

International researchers coming from France, Switzerland, Spain, Japan and United States have done different talks. In addition of traditional oral talks, 3 practical sessions have been carried out in order to apply some techniques addressed during the talks. The interactive sessions (pitch, poster, ...) have been a good environment for many exchanges

between participants and senior researchers.

**Lectures:**

*Academic talks:*

- *Structural Methods for Handwriting Analysis* Andreas Fischer Diva Group, University of Fribourg, Switzerland
- *Document Forgery, Authentication, Tampering and Forensics* David Doermann University of Buffalo, USA
- *Reproducible research and Performance Analysis* Bart Lamiroy Loria, University of Lorraine, France
- *General Introduction on TC10/TC11 research topics* Jean-Marc Ogier L3i, University of La Rochelle, France
- *Interactive Document Image Analysis : system taxonomy*

and associated techniques

Jean-Yves Ramel Lifat,  
University of Tours, France

- *Large-scale Document Retrieval* Marçal Rusiñol CVC, Universitat Autònoma de Barcelona, Spain
- *Machine learning for document analysis and understanding* Seiichi Uchida Human Interface Laboratory, Kyushu University, Japan
- *Scene text Understanding* Dimosthenis Karatzas CVC, Universitat Autònoma de Barcelona, Spain

**Industrial talks:**

- *Industrial perspectives in document analysis : Problematics and Best practices for partnerships* Vincent Poulain d'Andecy YOOZ company, France

**Lab sessions:**

- *Graph-based keyword spotting in historical manuscripts* Andreas Fischer Diva Group, University of Fribourg, Switzerland
- *Large-scale Document Retrieval* Marçal Rusiñol CVC, Universitat Autònoma de Barcelona, Spain
- *Extraction and Indexing of complex graphic content* Jean-Christophe Burie L3i, University of La Rochelle,

France

**Awards:** Two awards were given: a best poster award and an excellence award.

The winner of the Best Poster Award was selected based on the quality of the poster characterized by excellence in research and clarity in presentation. This award went to FLORIAN WESTPHAL from Blekinge Institute of Technology, Sweden.

The winner of the Excellence Award has been selected among the participants for their knowledge, collaboration ability, and work in the practice tasks. This award was presented to TARIN CLANUWAT from Research Organization of Information of the nformation and System Center for Open Data in the Humanities, Japan.

**Participants:** This event has gathered 24 PhD students and junior researchers from 11 countries. The breakdown by country is as follows: France (7), Finland (2), Pakistan (1), Italy/ Iran (1), Vietnam (4), Germany (2), Austria (1), Japan (1), Sweden (2), Indonesia (2), and Tunisia (1). Moreover, 16 Chinese master students and 1 Brazilian master student, who were present for a stay of one month in La Rochelle

University, joined the summer school during the academic and industrial talks in order to discover the field of document analysis.

**Conclusion:** All the lecturers are researchers who have been working in the field of document analysis and recognition (DAR) for a number of years. They are all involved in events in this field, such as ICDAR and ICFHR conferences and DAS workshop. Some of them are also involved in the TC10 and TC11 governing board.

The organizers chose the lecturers because of their knowledge in a specific field of DAR and because they are well known in their research domain. Consequently, the quality of the presentations was high.

A quick opinion poll was done among the participants. Most of them were very satisfied with the classes and the contents of the talks.

The talks have been recorded and are now available at the following address :

<http://portail-video.univ-lr.fr/2nd-IAPR-TC10-TC11-Summer-School>





## [ICFHR 2018](#)

### The 16th International Conference on Frontiers in Handwriting Recognition

General Chairs:

[Venu Govindaraju](#) (U. at Buffalo, USA), [R. Manmatha](#) (A9/Amazon, USA), and [Richard Zanibbi](#) (Rochester Inst. of Technology, USA)



by The General Chairs and Ranga Setlur (Organizing Chair)

Over 130 people attended ICFHR 2018, which combined a strong technical program, an attractive and comfortable meeting space with great food (the [Niagara Falls Event and Convention Center](#)), and the natural beauty of Niagara Falls. The banquet was held outdoors at the [Old Fort Niagara](#), which was first used by the French military in the late 1600s.

There was also plenty of fun to be had, particularly around the falls. Pictures from the conference are available through [flickr](#).

**Technical Program.** This was the first ICFHR to utilize a double-blind reviewing process, and we introduced 'Birds-of-a-Feather' talks, which were informal discussions on specific topics held during lunch and led by 1-2 session leaders. To our pleasant surprise, these informal meetings were so successful that the most common complaint was a lack of space at the tables where the discussions were held.

There were 125 paper submissions from 29 countries, of which 32 were accepted for oral presentation (26%), and 65 were

accepted for poster presentation (52%). The acceptance rate was  $97/125 = 78\%$ . The number of submissions was comparable to previous ICFHRs. All papers received at least 2 reviews, with 105 of them (84%) receiving three or more reviews.

Some very interesting keynote talks were given by Kevin Knight and Gregory R. Crane, addressing handwriting recognition from the different perspectives of a leading Computer Scientist and a leader in the Digital Humanities. Proceedings are available through [IEEE Xplore](#).

The [program](#) is available online, along with posters and slides provided by some of the authors.

**Sponsorship.** The conference secured both sponsorship and participation from leading companies creating handwriting recognition-based products (MyScript, Wiris, and Hyperscience), USC/ISI, and leaders in the broader computing space (Google and Apple). An industrial panel was held by David Doermann on the last day of the conference, exploring handwriting recognition technologies in industry, and common interests

between academic and industrial researchers working with handwriting. Also, thanks to support from the IAPR, we were able to provide funds for the IAPR ICFHR 2018 Awards.

**Awards.** The IAPR ICFHR 2018 Award recipients were:

- Best Paper (500 USD): Kenny Davila and Richard Zanibbi, for "Visual Search Engine for Handwritten and Typeset Math in Lecture Videos and LaTeX Notes"
- Best Student Paper (300 USD): Eugen Rusakov, Leonard Rothacker, Hyunho Mo, and Gernot A. Fink, for "A Probabilistic Retrieval Model for Word Spotting based on Direct Attribute Prediction"
- Best Poster (200 USD): Harald Scheidl, Stefan Fiel, and Robert Sablatnig, for "Word Beam Search: A Connectionist Temporal Classification Decoding Algorithm"

Our sincerest thanks to all the participants, Organizing Committee members, support staff and student volunteers for making ICFHR 2018 a great success. Hope to see many of you at [ICFHR 2020](#) in Dortmund!



Honorary Chair: Edwin R. Hancock (University of York, UK)

General Chair: Xiao Bai (Beihang University, China)

SPR Chair: Tin Kam Ho (IBM Watson, USA)

SSPR Chair: Richard C. Wilson (University of York, UK)



by Xiao Bai, General Chair

The joint IAPR International Workshops on Structural and Syntactic Pattern Recognition (SSPR 2018) and Statistical Techniques in Pattern Recognition (SPR 2018) was respectively the 17th and 12th editions of the SSPR and SPR workshops. This joint event is biannually organized by Technical Committee 1 (Statistical Pattern Recognition Technique) and Technical Committee 2 (Structural and Syntactical Pattern Recognition) of the International Association for Pattern Recognition (IAPR), and held in conjunction with the International Conference on Pattern Recognition (ICPR). The Conference venue, Fragrant Hills Hotel, is located in a beautiful suburb of Beijing.

This year, there were 71 papers submitted to the joint workshops, and 49 papers were accepted, 30 papers for oral and 19 papers for poster presentation. Each submission was reviewed by

at least two and usually three Program Committee members.

The topics of the SSPR Workshop were Structural Matching and Syntactic Pattern Recognition; Stochastic Structural Models; Graphical Models and Graph-theoretic Methods; Spectral Methods for Graph-Based Representations; Spatio-Temporal Pattern Recognition; Structured Text Analysis and Shape Analysis; Multimedia Analysis and Retrieval; Image Document Analysis and Understanding; and Intelligent Sensing Systems.

The SPR topics were Classification and Clustering; Gaussian Processes; Dimensionality Reduction; Metric Learning and Representation Learning; Dissimilarity Representations; Neural Networks and Deep Learning; Adversarial Learning and Reinforcement Learning; Data Complexity and Data Modeling; and Security of Machine Learning.

According to tradition, during the

S+SSPR workshop, the Pierre Devijver Award recipient presents an invited lecture. The 2018 award winner was Professor Edwin Hancock from University of York, York, UK. The program included three invited talks by experts in pattern recognition:

- *"There And Back Again"* by Prof. Edwin Hancock, University of York, UK (please see [related article](#) in this issue).
- *"Quantifying Semantic Information"* by Prof. Josef Kittler, University of Surrey, UK
- *"Towards Scene Understanding"* by Prof. Xilin Chen, Chinese Academy of Sciences, China

For the participants, the main social events of the workshop were a welcome banquet at Yuxiandu Royal Gastronomy Museum Restaurants and a half day excursion to the Summer Palace. The Summer Palace is an imperial garden in the Qing Dynasty. It was listed as World Heritage in 1998

and it is one of the best-preserved imperial garden in the world.

The workshops (S+SSPR 2018) were hosted by the School of Computer Science and Engineering, Beihang University, which is one of the leading comprehensive research universities in China, covering engineering, natural sciences, humanities, and social sciences. We also wish to express our gratitude for the financial support provided by the Beijing Advanced Innovation Center for Big Data and Brain Computing (BDBC), also based in Beihang University.

S+SSPR 2018 was a great success. This success gives the credit to the contributions of many people, among which the Organizing Committee Members: Edwin Hancock (Honorary Chair), Xiao Bai (General Chair), Tin Kam Ho (SPR Chair), Richard Wilson (SSPR Chair), Antonio Robles-Kelly and Battista Biggio (Programme Chairs), Peng Ren (Publicity Chair) and Xianglong Liu (Local Chair). We would like to thank all the Program Committee members for their help in the review process. We also wish to thank all the local organizers. Without their contributions, S+SSPR 2018 would not have been successful. Finally, we express our appreciation to Springer for publishing this volume.

**Conference proceedings**

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



Structural, Syntactic, and Statistical Pattern Recognition

Springer EXTRAS ONLINE

[CVIP 2018](#)

## Third International Conference on Computer Vision & Image Processing

Jabalpur, India

September 29-October 1 2018

<http://www.iiitdmj.ac.in/CVIP-2018/>

General Chairs:

[Bidyut Baran Chaudhuri](#) (ISI Kolkata, India)  
[Masaki Nakagawa](#) (Tokyo Institute of Agriculture and Technology, Japan)

Organizing Chairs:

[Pritee Khanna](#) (IIITDM Jabalpur, India),  
Balasubramanian Raman (IIT Roorkee, India),  
Partha Pratim Roy (IIT Roorkee, India),  
Ayan Seal (IIITDM Jabalpur, India)

Program Chairs:

Aparajita Ojha (IIITDM Jabalpur, India),  
Sanjeev Kumar (IIT Roorkee, India),  
Ananda Chowdhury (Jadavpur University, India),  
Gaurav Bhatnagar (IIT Jodhpur, India)



by Pritee Khanna

CVIP 2018 was organized at PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, by the Department of Computer Science and Engineering. The conference was endorsed by International Association of Pattern Recognition (IAPR) and sponsored by BrahMos Aerospace; Council of Scientific & Industrial Research, Govt. of India; Defense Research and Development Organization, Govt. of India; Indian Space Research Organization, Govt. of India; MathWorks; and SERB, Govt. of India.

The conference brought together delegates from around the globe in the focused area of computer vision and image processing. CVIP 2018 received a total of 206 paper submissions from which 81 high quality articles were selected for presentation based on reviews provided by the members of the technical program committee from 10 countries. The overall acceptance rate was around 39% and the oral acceptance rate was about 22%.

The presentations were made in eight oral sessions and four poster sessions. In this conference we were especially delighted to see the

enthusiasm of young researchers and interest shown by senior researchers in attending all the sessions and taking part in fruitful discussions. The papers and posters presented spanned areas from fundamentals in image processing and computer vision like segmentations, image representation and retrieval, and key frame detection to applications like activity detection, object tracking, facial expression understanding, face morphing based forgery detection, weather forecasting and storm prediction, signature verification, medical image processing, bag of visual words based representation, cancellable biometric for security, agriculture, domain adaptation of machine learning based applications, vision based applications in operations and maintenance and many applications that touch human life. Among other techniques, deep learning and convolutional neural networks remained dominant in the conference presentations and discussions.

The program also contained three plenary talks and two invited talks by eminent researchers in computer vision and image processing as well as an industry session by MathWorks. We are very grateful to these speakers:

- Prof. Masaki Nakagawa, Tokyo Institute of Agriculture and Technology, Japan delivered a talk on Latest Applications of Deep Neural Networks to Handwriting Recognition and Identification
- Prof. Venu Govindaraju, SUNY Distinguished Professor of Computer Science and Engg, University at Buffalo, The State University of New York delivered a talk on The Four Seasons of Artificial Intelligence

- Prof. Hironobu Fujiyoshi, Dept. of Robotic Science and Technology, Computer Science (graduate school), Chubu University, Graduate School of Engineering, Japan delivered a talk on Affine-invariant Local Feature Representation for Keypoint Matching
- Dr. R. Venkatesh Babu, Indian Institute of Science, Bangalore delivered a talk on Deep Neural Networks and It's Robustness
- Ms. Ramya Hebbalaguppe, TCS Innovation Labs, New Delhi Area, India delivered a talk on Deep Learning for Augmented Reality Applications

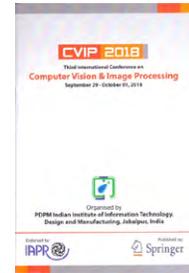
The works presented were of very high quality, and four prizes were awarded to encourage the recipients.

- IAPR Best Paper Award: "Fused Spectral Features in Kernel Weighted Collaborative Representation for Gender Classification using Ocular Images", Kiran B. Raja, R. Raghavendra, Christoph Busch
- IAPR Best Student Paper Award: "Things at Your Desk: A Portable Object Dataset", Saptakatha Adak
- Best Poster Award: "Co-Detection in Images using Saliency and Siamese Networks", Milan Zinzuvadiya, Vatsalkumar Dhameliya, Sanjay Vaghela, Sahil Patki, Nirali Nanavati, and Arnav Bhavsar
- Certificate of Merit: "Action Recognition from Egocentric Videos using Random Walks", Abhimanyu Sahu, Rajit Bhattacharya, Pallabh Bhura, Ananda S. Chowdhury

The conference also hosted a challenge on supervised classification of bird species from a set of bird images. The winners

were Mr. Akash Kumar, Delhi Technological University, India and Mr. Sourya Dipta Das, Jadavpur University, Kolkata, India.

CVIP 2018 Proceedings will be published by Springer in two volumes of their "Advances in Intelligent Systems and Computing (ASIC)" series. Click on the image below to go to the Springer website for this series.



The organization of the conference was due to synergistic contributions of various individuals and groups including the international advisory committee members from eight countries with their invaluable suggestions, the technical program committee members with their timely high quality reviews, the plenary and invited speakers with their informative talks, the student volunteers with their tireless help, and our sponsors and endorsers with their timely support. We owe a big thanks to the IAPR for endorsing the conference and sponsoring two best paper prizes.

From the feedback received, we believe that CVIP 2018 was a successful conference both scientifically and socially and are working to make CVIP 2019 even more successful.



# ISAIR2018



## The 3rd International Symposium on Artificial Intelligence and Robotics 2018

November 17-19, 2018 Nanjing, China

General Chairs:

Gangshan Wu (Nanjing University, China)

Hyoungeop Kim (Kyushu Institute of Technology, Japan)

by Huimin Lu, Kyushu Institute of Technology, Japan.

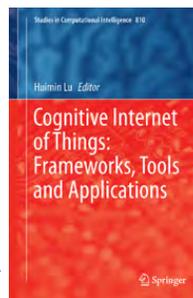
ISAIR2018 was endorsed by the IAPR, IEEE Fukuoka Section, the Institute of Electrical Engineers of Japan, Jiangsu Association of Artificial Intelligence and had financial sponsorship from the National Natural Science Foundation of China and International Society for Artificial Intelligence and Robotics.

The integration of artificial intelligence and robotic technologies has become a topic of increasing interest for both researchers and developers from academic fields and industries worldwide. It is foreseeable that artificial intelligence will be the main approach of the next generation of robotic research. The explosive number of artificial intelligence algorithms and increasing computational power of computers has significantly extended the number of potential applications for robotic technologies. It has also brought new challenges to the artificial intelligence community. The aim of this symposium is to provide a platform for young researchers to share up-to-date scientific achievements in this field.

ISAIR2018 received 208 paper

submissions from 12 countries/ areas (namely Australia, Austria, China, Christmas Island, Hong Kong, Japan, Malaysia, Mexico, Nigeria, Pakistan, South Korea, and USA), a substantial increase over previous years. 15 Area Chairs, together with the Program Committee and a team of nearly 100 additional reviewers were involved in the peer-review process. As a result, 8 papers (3.85% of the total submissions) were accepted for oral presentation and 62 papers (29.8% of the total submissions) were accepted for spotlight presentation.

The proceedings were electronically published and are now available at Springer book series "[Cognitive Internet of Things: Frameworks, Tools and Applications](#)".



Moreover, authors of the accepted papers have been invited to submit substantially extended versions of their papers to well-known journals, such as Computers and Electrical Engineering, Mobile Networks and Applications, Multimedia Tools and Applications, Optics and Laser Technology, Wireless Communications and Mobile Computing, and Neural Computing

and Applications.

The final [program](#) was organized into a single track with an opening ceremony, three keynote talk sessions, one oral presentation session, three spotlight presentations sessions, and one China-Korea Cognitive IoT workshop session.

Keynote and Invited Talks:

- "Visual Distortion Detection and Reduction in 3D Video: Recent Advances" by Prof. Ce Zhu (IEEE Fellow).
- "Image Processing Technique for Computer Aided Diagnosis" by Prof. Hyoungeop Kim, and
- "Continuum Robots for Minimally Invasive Surgery: Smaller, Softer, and Smarter" by Prof. Liao Wu.
- "Extreme Optical Imaging for Underwater Robotic Vision" by Prof. Huimin Lu
- "Development of the Honeybee Life-Log Monitoring System Using RFID-tag and Image Processing" by Prof. Shinya Takahashi
- "Large Scale Automated Screening and Analysis Using Retinal Fundus Images" by Dr. Xin Zhao
- "Software Development Paradigms and Practices with Computing Environment" by

- Prof. Arun Kumar Sangaiah.
- “*Deep Prototype Learning for Robust Pattern Recognition*” by Prof. Chenglin Liu (IEEE/ IAPR Fellow).
- Five invited talks were as follows: “*Improve Health System with Intelligence*” by Prof. Zongyuan Ge
- “*Advanced Control Methods in Medical and Welfare Applications*” by Prof. Shenglin Mu.

In addition to the above scientific activities, three papers were selected by the award committee as the best papers.

**Best Paper:**

Xinsheng Wang, Shanmin Pang, Jihua Zhu, Jiaying Wang, Lin

Wang (Xi'an Jiaotong University, China) for their paper entitled “*An Efficient Aggregation Method of Convolutional Features for Image Retrieval*”.

**Best Presentation Paper:**

Csaba Beleznai, Daniel Steininger, Elisabeth Broneder (Austrian Institute of Technology, Austria) for their paper entitled “*Human Detection in Crowded Situations by Combining Stereo Depth and Deeply-learned Models*”.

**Best Student Paper:**

Wenda Zhao, Weiling Yin, Di You, Dong Wang (Dalian University of Technology, China) for their paper entitled “*Local Binary Pattern Metric-based Multi-Focus Image Fusion*”.

Kyungpook National University in South Korea was selected as the venue of [ISAIR2019](#). Finally, we think the ISAIR2018 was a great conference both scientifically and socially.



**IAPR Then and Now...**

*IAPR Newsletter*, Vol. 3 No. 2, September 1980

**CONFERENCES AND WORKSHOPS**

**MILITARY AND SPACE APPLICATIONS OF ROBOTICS**

The conference will be held in Washington, D.C., on Monday, Tuesday, and Wednesday, November 3 through 5, 1980. The purpose of the conference is to bring together major workers in the field to discuss the feasibility of current and future (military and space) applications of robot systems and to bring these ideas to the attention of those who should encourage the development and deployment of such systems.

The conference is co-sponsored by the Information Processing Directorate of the Office of Naval Research and the Computer Science Laboratory of the Communications Sciences Division of the Naval Research Laboratory. Over a dozen luminaries of the robot world have been invited to speak at the conference. The focus of the conference will be on current and future applications and on advanced robot technology including sensors, object recognition, control systems, high-level robot languages, robot planning, and problem-solving systems. Discussion of "old-fashioned industrial robots with little or no sensing capabilities is explicitly excluded.

For information contact: John S. Dehne



[CIARP 2018](#)

## 23rd Iberoamerican Congress on Pattern Recognition

Madrid Spain

November 19-22, 2018

<http://atvs.ii.uam.es/ciarp2018/>

General Chair:

[Julian Fierrez](#) (Universidad Autónoma de Madrid, Spain)

Program Chairs

[Ruben Vera-Rodriguez](#) [Program Coordinator] (Universidad Autónoma de Madrid, Spain)

[Sergio Velastin](#) (Univ. Carlos III de Madrid, Spain; and Queen Mary University of London, UK)

[Manuel Montes-y-Gomez](#) (INAOEP, Mexico)

by Ruben Vera-Rodriguez and  
Julian Fierrez

CIARP-2018 was held in the charming city of Madrid, Spain, at Escuela Politécnica Superior (School of Engineering) of Universidad Autónoma de Madrid. The conference was attended by 115 delegates from 20 countries. It was truly an international experience!

The conference featured a rich technical program consisting of four keynote talks, four round tables, one special session on research funding and cooperation, 34 oral presentations, 78 poster presentations and 16 late breaking works poster presentations.

The Program Chairs selected 112 papers out of 187 standard submissions after a rigorous review process that involved more than 550 reviews from 117 reviewers. The accepted papers formed the technical program, which consisted of 6 oral sessions and 3 poster sessions. The oral sessions were focused on the following topics: machine learning, computer vision (two sessions), classification, biometrics and medical applications and

brain signals. The three poster sessions included papers on all previous topics and also on text and character analysis, human interaction and sentiment analysis. A novelty of CIARP 2018 was the inclusion of late breaking works submissions, in total 16, which were included in the program as poster presentations.

CIARP-2018 had a distinguished set of keynote speakers:

- Jiri Matas, from Czech Technical University, Prague, with a talk titled: "Model Fitting in Computer Vision".
- Johan Suykens, from KU Leuven, BELGIUM, gave a talk on: "Deep Learning and Kernel Machines: towards a Unifying Framework". This keynote talk was followed by a round table discussion on Machine Learning moderated by Joao Paulo Papa (President of the Brazilian IAPR Society) and featured Alberto Suarez (Full Prof. of Computer Science and Artificial Intelligence, UAM) Alvaro Barbero (Instituto de Ingeniería del Conocimiento) and Lucas Garcia (MathWorks).
- Björn Schuller, Imperial College London, UK & University of Augsburg, GERMANY, with a talk entitled: "Casting Data for Deep Speech and Audio Analysis". This keynote talk was followed by a round table discussion on Speech and Natural Language moderated by Joaquin Gonzalez-Rodriguez (Full Prof. of Telecommunications Eng., UAM), and featured Paulo Rosso (Universitat Politecnica de Valencia), Javier Gonzalez (EVO Banco) and Luis Buera (Nuance Communications Inc.).
- Francisco Herrera, Universidad de Granada, SPAIN, gave a talk on: "Big Data: The Necessary Triplet of Technology, Quality Data and Scalable Algorithms". This keynote talk was followed by a round table discussion on Big Data moderated by Jose Salvador Sanchez-Garreta (President of the Spanish IAPR Society) and featured Jose M. Torres (Telefonica), Pablo Peris (Microsoft), Israel Herraiz (Google) and Wolfram Rozas (IBM Cognitive Solutions)

CIARP 2018 also featured a special session on Research Funding and Cooperation, which was moderated by Julian Fierrez (General Chair CIARP-2018) and featured Manuel Falcon (CDTI, Ministerio de Ciencia, Innovación y Universidades, Spain), María Sopeña (European Projects Manager, UAM) and Carmela Calés (Vice Rector for Internationalization, UAM).

Three awards were presented at the banquet dinner:

- CIARP Best Paper Award to Ignacio Araya, Carlos Valle

and Hector Allende, for the paper: "LSTM-based Multi-scale Model for Wind Speed Forecasting".

- CIARP Best Student Paper Award to Pedro Diego Lopez, Roberto Valle and Luis Baumela, for the paper: "Facial Landmarks Detection using a Cascade of Recombinator Networks".
- Aurora Pons-Porrata Award to María Vanrell, Universitat Autònoma de Barcelona. This is an Iberoamerican annual prize given to a living woman

in recognition of an outstanding technical contribution to the field of pattern recognition or data mining.

The full program of CIARP-2018 can be accessed at: [http://atvs.ii.uam.es/ciarp2018/docs/CIARP2018\\_ConferenceProgramme.pdf](http://atvs.ii.uam.es/ciarp2018/docs/CIARP2018_ConferenceProgramme.pdf)

The proceedings of CIARP 2018 will be published in Springer's Lecture Notes in Computer Science, LNCS, series.

CIARP 2019 will be held in Havana, Cuba in 2019.

## CIARP 2018 Award Winners



Best paper



Best Student Paper



Aurora Pons-Porrata



**CIARP 2019**  
24th Iberoamerican Congress on  
Pattern Recognition

Havana, Cuba  
October 28–31, 2019

# FREE BOOKS / eBOOKS

Various publishers have partnered with the IAPR Newsletter to offer free books/ebooks to reviewers. If you have interest in and some knowledge of the topic, email us. Depending upon the publisher's availability, you will get an ebook or a hardcopy book or both. In some cases, the publisher may send the ebook first and the hardcopy after review. In future issues of the Newsletter, we may publish a list of pending reviews.

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



We are offering the following Springer titles for review:

- \* **"Denoising of Photographic Images and Video"** by Marcelo Bertalmío (Ed.): <https://www.springer.com/book/9783319960289>
- \* **"Composing Fisher Kernels from Deep Neural Models"** by Tayyaba Azim and Sarah Ahmed: <https://www.springer.com/book/9783319985237>
- \* **"Nonlinear Eigenproblems in Image Processing and Computer Vision"** by Guy Gilboa: <http://www.springer.com/book/9783319758466>
- \* **"Domain Adaptation in Computer Vision Applications"** by Gabriela Csurka (Ed.): <http://www.springer.com/book/9783319583464>
- \* **"Deep Learning for Biometrics"** by Bir Bhanu et al. (Eds.): <http://www.springer.com/book/9783319616568>
- \* **"Decision Forests for Computer Vision and Medical Image Analysis"** by Antonio Criminisi and J. Shotton (Eds.): <http://www.springer.com/gb/book/9781447149286>
- \* **"Handbook of Biometric Anti-Spoofing, Second Edition"** by Sébastien Marcel et al. (Eds.): <http://www.springer.com/book/9783319926261>
- \* **"Hierarchical Perceptual Grouping for Object Recognition"** by Eckart Michaelsen and Jochen Meidow: <http://www.springer.com/book/9783030040390>
- \* **"Contactless 3D Fingerprint Identification"** by Ajay Kumar: <http://www.springer.com/book/9783319676807>



We are offering any of the following from CRC Press:

- \* **Image Operators: Image Processing in Python** by Jason M. Kinser: <https://www.crcpress.com/Image-Operators-Image-Processing-in-Python/Kinser/p/book/9781498796187>
- \* **A Beginner's Guide to Image Pre-processing Techniques** by Jyotismita Chaki and Nilanjan Dey: <https://www.crcpress.com/A-Beginners-Guide-to-Image-Pre-processing-Techniques/Chaki-Dey/p/book/9781138339316>
- \* **Imaging from Spaceborne and Airborne SARs, Calibration, and Applications** by Masanobu Shimada: <https://www.crcpress.com/Imaging-from-Spaceborne-and-Airborne-SARs-Calibration-and-Applications/Shimada/p/book/9781138197053>
- \* **Remote Sensing Time Series Image Processing** by Qihao Weng: <https://www.crcpress.com/Remote-Sensing-Time-Series-Image-Processing/Weng/p/book/9781138054592>
- \* **Remote Sensing and Cognition: Human Factors in Image Interpretation** by Raechel A. White, Arzu Coltekin, and Robert R. Hoffman: <https://www.crcpress.com/Remote-Sensing-and-Cognition-Human-Factors-in-Image-Interpretation/White-Coltekin-Hoffman/p/book/9781498781565>
- \* **High Spatial Resolution Remote Sensing: Data, Analysis, and Applications** by Yuhong He and Qihao Weng: <https://www.crcpress.com/High-Spatial-Resolution-Remote-Sensing-Data-Analysis-and-Applications/He-Weng/p/book/9781498767682>
- \* **Image Processing and Data Analysis with ERDAS IMAGINE®** by Stacy A. C. Nelson and Siamak Khorram: <https://www.crcpress.com/Image-Processing-and-Data-Analysis-with-ERDAS-IMAGINE/AC-Nelson-Khorram/p/book/9781138034983>

We are offering the following from Sebtel Press, Sheffield, UK:

- \* **Principles of Neural Information Theory: Computational Neuroscience and Metabolic Efficiency** by Dr. James V. Stone: <http://jim-stone.staff.shef.ac.uk/BookNeuralInfo/NeuralInfoMain.html>





**This bulletin board  
contains items of interest to the  
IAPR Community**



**Call for Papers**

Pattern Recognition  
Letters

**Virtual Special issue on  
Intelligent Industrial Digital  
Forensics and Biocybernetics:  
Practices and Challenges**

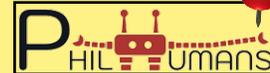
Submissions: 1-31 MAR 19  
Deadline: 31 MAR 2019

<https://www.journals.elsevier.com/pattern-recognition-letters/call-for-papers/virtual-special-issue-on-intelligent-industrial-digital-fore>



Call for Applications

**8 PhD Positions**



Marie Skłodowska-Curie – ITN, Industrial Doctorate program

**PHILHUMANS: Personal Health Interfaces  
Leveraging Human-Machine Natural interactionS**

**What:** The PHILHUMANS project, funded by the EU's Horizon 2020 research & innovation programme under the Marie Skłodowska-Curie-ITN, Industrial Doctorate program, has **8 PhD positions** in the areas of Computational Intelligence, Computer Vision, and Natural Language Processing.

**Where:** Among the 8 positions, the two listed below are hosted by the University of Catania and Philips, with PhD awarded by the University of Catania, IT.

1. ESR5 - SCENE UNDERSTANDING AND INTERACTION ANTICIPATION FROM FIRST PERSON VISION:  
Details: <https://www.philhumans.eu/esrs/esr-5>
2. ESR6 - FACE ANALYSIS AND BODY LANGUAGE UNDERSTANDING FROM EGOCENTRIC CAMERAS.  
Details: <https://www.philhumans.eu/esrs/esr-6/>

**See all 8 positions here:** <https://www.philhumans.eu/esrs/>

**How:** The application procedure was opened in the beginning of January. The main entry point to send applications is the PHILHUMANS website <http://www.philhumans.eu>

**Social Recall Personal App**  
Recognize family, friends and work colleagues reliably and instantly from your own smartphone.  
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**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 & Applications \(MV&A\)](#).

**Deadline to subscribe: March 31, 2019**

Regular Individual Electronic Subscription Rate for each journal - ~~US\$99~~  
IAPR Society Member Electronic Subscription Rate for each journal - US\$50

To make use of the IAPR Society Member Electronic Subscription rate for either or both of these publications, please contact Rachel Moriarty ([rachel.moriarty@springer.com](mailto:rachel.moriarty@springer.com)).

# 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	
2019	FEB <a href="#">ICPRAM 2019</a> : 8th International Conference on Pattern Recognition Applications and Methods	<a href="#">ICPRAM 2018</a>	Czech Republic	
	MAR <a href="#">DGCI 2019</a> : 21st Intl. Conf. on Discrete Geometry for Computer Imagery	<a href="#">DGCI 2017</a>	France	
		<a href="#">CCIW 2019</a> : 2019 Computational Color Imaging Workshop	<a href="#">CCIW 2017</a>	Japan
	MAY	<a href="#">IWBFB 2019</a> : 7th International Workshop on Biometrics and Forensics	<a href="#">IWBFB 2018</a>	Mexico
		<a href="#">PRIP 2019</a> : 14th Intl. Conf. on Pattern Recognition and Information Processing	<a href="#">PRIP 2016</a>	Belarus
		<a href="#">MVA 2019</a> : 16th International Conference on Machine Vision Applications	<a href="#">MVA 2017</a>	Japan
	JUN	<a href="#">ICB 2019</a> : 12th IAPR International Conference on Biometrics	<a href="#">ICB 2018</a>	Greece
		<a href="#">SCIA 2019</a> : 21st Scandinavian Conference on Image Analysis	<a href="#">SCIA 2017</a>	Sweden
		<a href="#">GbR 2019</a> : 12th International Workshop on Graph-based Representation	<a href="#">GbR 2017</a>	France
		<a href="#">MCPR 2019</a> : 11th Mexican Congress on Pattern Recognition	<a href="#">MCPR 2018</a>	Mexico
	JUL	<a href="#">IbPRIA 2019</a> : 9th Iberian Conf. on Pattern Recognition and Image Analysis		Spain
	JUL	<a href="#">ICPRS 2019</a> : 10th International Conference on Pattern Recognition Systems	<a href="#">ICPRS 2018</a>	France
	AUG	<a href="#">ISAIR 2019</a> : 4th International Symposium on Artificial Intelligence and Robotics	<a href="#">ISAIR 2018</a>	Korea
	SEP	<a href="#">CAIP 2019</a> : 18th Intl. Conf. on Computer Analysis of Images and Patterns		Italy
		* <a href="#">GCPR 2019</a> : German Conference on Pattern Recognition *		Germany
		<a href="#">ICDAR 2019</a> : 15th International Conference on Document Analysis Systems	<a href="#">ICDAR 2017</a>	Australia
	OCT	<a href="#">CVIP 2019</a> : 4th Intl. Conference on Computer Vision and Information Processing	<a href="#">CVIP 2018</a>	India
	NOV	<a href="#">CIARP 2019</a> : 15th 24th Iberoamerican Congress on Pattern Recognition	<a href="#">CIARP 2018</a>	Cuba
	DEC	<a href="#">ACPR 2019</a> : 5th Asian Conference on Pattern Recognition	<a href="#">ACPR 2017</a>	New Zealand
		<a href="#">PReMI 2019</a> : 8th Intl. Conference on Pattern Recognition and Machine Intelligence	<a href="#">PReMI 2017</a>	India
<a href="#">MedPRAI 2019</a> : 3rd Mediterranean Conference on Pattern Recognition and Artificial Intelligence		<a href="#">MedPRAI 2018</a>	Turkey	
2020	<a href="#">ICFHR 2020</a> : 25th International Conference on Pattern Recognition	<a href="#">ICFHR 2018</a>	Germany	
	<a href="#">ICPR 2020</a> : 25th International Conference on Pattern Recognition	<a href="#">ICPR 2018</a>	Italy	

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**Deadline for the next issue: March 20, 2018**

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