

IAPR

[www.iapr.org](http://www.iapr.org)



# Newsletter

Volume 42, Number 2  
April 2020

Special Issue

ICDAR 2019

15th International Conference on Document Analysis and Recognition  
20-25 September 2019 | International Convention Centre Sydney, Australia



Subscribe

IN THIS

Issue

From the Editor's Desk

[CALLS for PAPERS](#)

[Calls from the IAPR Nominating, J.K. Aggarwal Prize, Education, and Industrial Liaison Committees and the ExCo](#)

[Call for Bids to Host ICPR 2024](#)

[IAPR...The Next Generation: Fei Xu](#)

[From the ExCo: News plus](#)

[Impact of the COVID-19 pandemic on our community](#)

[In Memoriam: Reinhard Klette](#)

[In Memoriam: Thomas S. Huang](#)

[Call for Papers for ICPR2020!](#)

[Technical Committee \(TC\) News: TC3, TC7, TC11, TC16, TC18, and TC19](#)

[ICDAR 2019 Section:](#)

[ICDAR 2019,](#)

[ICDAR 2019 Awards, GREC 2019,](#)

[HIP 2019, ICDAR-OST 2019,](#)

[IWCDF 2019, HDI 2019, and](#)

[CBDAR 2019](#)

[Meeting Reports: DGCI 2019,](#)

[ICPRS 2019, and CIARP 2019](#)

[BooksBooksBooks](#)

[Bulletin Board](#)

[Meeting and Education Planner](#)



## Reflections on Collaborations in Pattern Recognition

by Andreas Dengel

German Research Center for Artificial Intelligence

<https://www.dfki.de/en/web/about-us/employee/person/ande00/>

Editor's note:

Prof. Dr. Andreas Dengel received the 2019 [ICDAR Outstanding Achievements Award](#) "for contributions in semantic technologies applied to reading systems, the impact of his innovative solutions in the socio-economic sectors, and his leadership and strategic vision of the document analysis community."

As you read, you will see how Prof. Dr. Dengel's career moves brought him into contact with researchers from around the world, how important those connections were and are, and how he maintained those contacts and collaborations throughout his varied and successful career.

~ Jing Dong, IAPR Newsletter EiC

I studied computer science and economics at the Technical University of Kaiserslautern until 1986 with a focus on Artificial Intelligence/Pattern Recognition. Subsequently, I started working at Siemens Labs in Munich, Germany, where I did research on Geometric Reasoning and Pattern Recognition.

Afterwards, I took a position at the University of Stuttgart and received my doctorate in 1989. This year was a special year not only because of this, but also because I successfully published a paper on document understanding at the top AI conference IJCAI (International Joint





# 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/)

## 2020

### [DeLTA 2020](#)

1st International Conference on Deep Learning Theory and Applications  
Lieu saint, Paris, France  
Deadline: Apr. 29, 2020  
Dates: Jul. 8-10, 2020

### [SSB 2020](#)

17th Intl. Summer School for Advanced Studies on Biometrics for Secure Authentication  
**Virtual Summer School** (originally in Alghero, Italy)  
Application Deadline: Apr. 30, 2020  
Dates: Jun. 8-12, 2020

### [ISAIR 2020](#)

5th International Symposium on Artificial Intelligence and Robotics  
Kitakyushu, Japan  
Deadline: May 1, 2020  
Dates: August 8-10, 2020

### [DGMM 2020](#)

1st International Conference on Discrete Geometry and Mathematical Morphology  
Uppsala, Sweden  
Deadline: Jun. 1, 2020  
Dates: Dec. 14-17, 2020

### [DAS 2020](#)

14th Int. Workshop on Document Analysis Systems  
**Virtual Conference** (originally in Wuhan, China)  
Short Papers Deadline: Jun. 1, 2020  
Dates: end of July 2020 (exact dates TBA)

### [ANNPR 2020](#)

9th Workshop on Artificial Neural Networks in Pattern Recognition  
Winterthur, Switzerland  
Deadline: Jun. 10, 2020  
Dates: Sep. 2-4, 2020

### [MedPRAI 2020](#)

4th Mediterranean Conference on Pattern Recognition and Artificial Intelligence  
Hammamet, Tunisia  
Deadline: Jun. 15, 2020  
Dates: Dec. 20-22, 2020

### [CVIP 2020](#)

5th International Conference on Computer Vision and Image Processing  
Jaipur, India  
Deadline: Jul. 30, 2020  
Dates: Dec. 4-6, 2020

## 2021

### [ICPR 2020](#)

25th International Conference on Pattern Recognition  
Milan, Italy  
Second Round Submission Deadline: Jul. 10, 2020  
Dates: Jan. 10-15, 2021

### [S+SSPR 2020](#)

IAPR Joint International Workshops on Statistical Techniques in Pattern Recognition (SPR) and Structural and Syntactic Pattern Recognition (SSPR)  
Padua, Italy  
Deadline: Oct. 16, 2020; Dates: Jan. 19-22, 2021

### [ICPR 2020 Workshops](#)

Click above to go to the ICPR2020 Workshops web page for a list of Workshops that have been provisionally accepted as part of the ICPR2020 Program.  
Milan, Italy  
Dates: Jan. 10 & 11, 2021

### Call for Nominations

2020 [J. K. Aggarwal Prize](#)  
to be presented at ICPR 2020 (Jan. 2021) in Milan, Italy  
Deadline: Sep. 11, 2020

Conference on Artificial Intelligence), where I met many interesting people, such as Henry Kautz or Yan LeCun.

After my PhD, I decided to go to the US and successfully applied for a post-doctoral guest researcher position at Xerox PARC where I got to know Marc Weiser, Doug Appelt, and Larry Spitz. I gave talks at Stanford University, ICSI,

Berkeley University, University of Las Vegas and became member of the advisory board of the newly founded ISRI in Las Vegas.

I started discussions with the National Institute of Standards and Technology (NIST) thus becoming a member of NIST METTREC Planning Committee on Metadata/Text Retrieval. I participated in SSPR in Murray Hill, New Jersey

and joined the founding group for initiating a new conference series, which lead to the first International Conference on Document Analysis and Recognition (ICDAR) in Saint-Malo, France. In 1991 I became a PC member of the first ICDAR and kept on contributing to all following ICDAR conferences.

My career at the German Research Center for Artificial Intelligence

(DFKI) started with the end of my postdoctoral position at Xerox PARC. I applied for a professorship in 1992 and started working at the University of Kaiserslautern in April 1993. At the same time, I became a Scientific Director at DFKI, where I set-up my own small group that focused on various topics of document analysis and recognition. The department is nowadays called "Smart Data and Knowledge Services" and our scientists deal with topics such as Machine Learning, Document Understanding, Multimedia Mining or Semantic Technologies.

From the beginning on I have tried to build up a large network of contacts and collaborations across the world. A collaboration that started in 1993 and that has accompanied me until today is the manifold work with Japan.

One fruitful outcome was the founding of the Institute on Document Analysis and Knowledge Science (IDAKS) at the Osaka Prefecture University

(OPU), together with Prof. Kise. Since 2009, I am also authorized to teach and examine at Osaka Prefecture University and hold a professorship (kyakuin) at the Department of Computer Science and Intelligent Systems, where pattern recognition is also a hot topic besides quantified learning, data mining, semantic technologies and document analysis.

Today, I am an Executive Director of the largest independent AI research institute, guiding my own group with about 100 researchers, software engineers and students. I lead research projects with a total budget of more than 100 Mio. US\$, many of them with exciting findings, and impact.

It was fascinating for me to establish and develop DFKI, an institution giving me the freedom to work on innovations that allow me to transform ideas into technologies. This is not only true for the many projects I finished for my industrial partners, but also for the more than one dozen start-ups

I founded or mentored.

Based on what we established via DFKI, Document Analysis was selected by a jury on behalf of the Federal Ministry of Education and Research (BMBF) as one of the ten most important technologies in 50 years of AI history in Germany. Therefore, I am not only grateful to my fantastic team but also to the many people who I met during my career, who have inspired me in my life and have accompanied me many years. It is impossible to name them all, but some of them were Jürgen Schürmann, Horst Bunke, George Nagy, Larry Spitz, and Koichi Kise.

I still remember well when I authored my "Getting to know..." article for the IAPR Newsletter in 2012. At that time, I was talking about a good 15 years ahead of me. This time has become less, but not the interest to start more exciting cooperations and projects and to meet interesting people of the pattern recognition community all over the world.

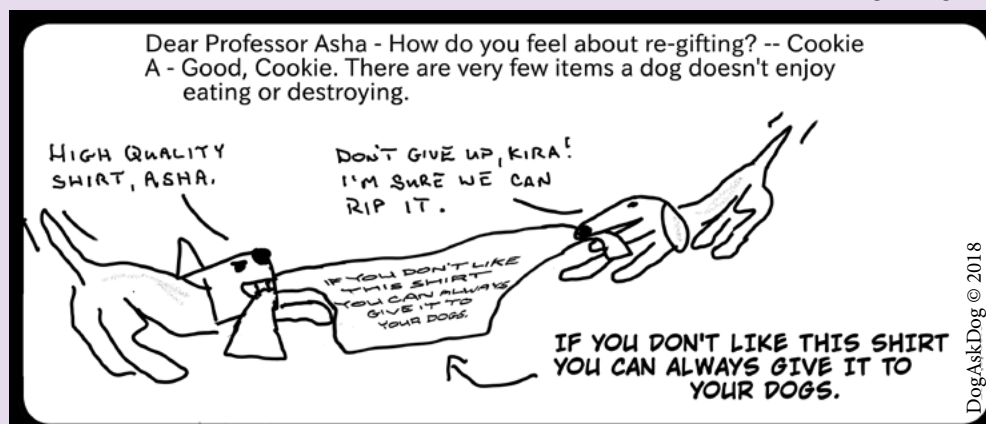
IAPR Then and Now...Closing paragraph from  
**Getting to know...Andreas Dengel, IAPR Fellow**  
IAPR Newsletter Volume 34 Number 4, October 2012

There are, God willing, still some fifteen years left in my professional life. This year, I am involved in organizing ICPR 2012 in Tsukuba, Japan as a Tutorial Chair and in ICFHR in Bari as a Program Co-Chair. I am quite sure that there will be a whole bunch of new, exciting contributions that I can make to our Pattern Recognition society in the future.

Editor's note:

Without collaboration and mutual encouragement, these dogs would never accomplish their goal.

~ Jing Dong, IAPR Newsletter EiC



©DogAskDog.com. "Dog advice. By dogs, for all." Used with permission.

# Calls from IAPR Committees

From the IAPR  
Nominating Committee:  
**Call for Nominations  
for the  
2020-22 IAPR ExCo**  
**Deadline: May 15, 2020**

The IAPR Governing Board will elect new IAPR Officers at its meeting at ICPR 2020 in Milan. The IAPR Nominating Committee seeks your help in finding candidates for the jobs of President, First Vice President, Second Vice President, Secretary, and Treasurer.

**Contact information:**  
Simone Marinai  
Chair, IAPR Nominating  
Committee  
[simone.marinai@unifi.it](mailto:simone.marinai@unifi.it)

From the J.K. Aggarwal Prize Committee:  
**Call for Nominations for the 2020 J.K. Aggarwal Prize  
to be presented at ICPR 2020 (January 2021) in Milan, Italy**  
**Deadline for Submission of Nomination & Endorsement Forms:**

**May 14, 2020** September 11, 2020

[https://iapr.org/fellowsandawards/awards\\_aggarwal.php](https://iapr.org/fellowsandawards/awards_aggarwal.php)

The recipient is a young scientist, under the age of 40 at the nominations deadline, who has brought a substantial contribution to a field that is relevant to the IAPR community and whose research work has had a major impact on the field.

Please click on the link above for details about nominations and selection.

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 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. 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.

**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:**  
(see examples at the URL 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:

**For students:**  
If you are a student,  
please visit the web site  
listed above.

**NOTE:** At the time of  
publication, there were  
35 opportunities listed  
and almost 8300 accesses  
since November 2017.

**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/Winter Schools**

<https://iapr.org/conferences/summerschools.php>

**Deadline schedule:**

<b>Deadline:</b>	<b>School dates:</b>
<b>February 1st</b>	<b>April-July</b>
<b>June 1st</b>	<b>August-November</b>
<b>October 1st</b>	<b>December-March</b>

"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](#).

# Calls from IAPR Committees (continued)

From the IAPR  
Conferences & Meetings Committee (C&M)

## Call for Bids to Host ICPR 2024

Deadline: ~~May 1, 2020~~ **October 1, 2020**

Click [here](#) to go the ICPR Proposals page at the IAPR website.

The International Conference on Pattern Recognition (ICPR) is the major scientific event organised under the auspices of the International Association for Pattern Recognition (IAPR).

The aim of this conference is to bring together international experts to share their work and experiences and to promote research and development in Pattern Recognition.

The conference is hosted by an institution under the auspices of an endorsing IAPR member organisation (national pattern recognition society).

Any such institutions interested in making a proposal to host an ICPR must proceed according to the rules outlined in the latest version of the guidelines.

*NOTE: the Bidding and Hosting Guidelines have recently been revised as two separate documents. The content has also changed from previous versions. It is important for prospective hosts to carefully read both documents.*

The submission of a bid implies full agreement with the guidelines and procedures for hosting the conference as well as with the IAPR constitution.

### Deadlines and Decisions:

Bids to host ICPR 2024 must be submitted to the Chair of the IAPR Conferences and Meetings Committee (C&M) by ~~May 1, 2020~~ **October 1, 2020**.

The selection of the conference venue will be made by the IAPR Governing Board (GB) during its meeting at ICPR 2020 in Milan, Italy, in January 2021.

Institutions interested in organising ICPR 2024 should submit the bid to C&M Chair Laurence Likforman ([likforman@telecom-paristech.fr](mailto:likforman@telecom-paristech.fr)) by ~~May 1, 2020~~ **October 1, 2020**.

Laurence Likforman  
IAPR C&M Chair

# IAPR... The Next Generation

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

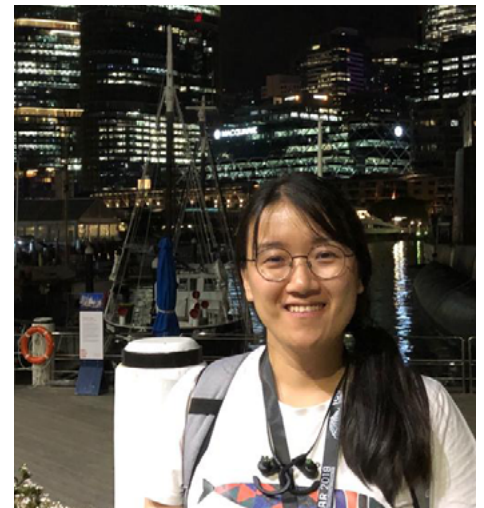
- *Briefly: How did you get involved in pattern recognition?*
- *In more detail: What technical work have you done, and what is/are your current research interest(s)?*
- *And lastly: How can the IAPR help young researchers?*

*~Jing Dong, Editor -in-Chief*

## Fei Xu

*Fei Xu received her bachelor's degree in Electrical Engineering from Zhejiang University City College in 2012. In 2015, she received her master's degree in Computer Science from the University at Buffalo, where she is now a Ph.D. student at the Center for Unified Biometrics and Sensors (CUBS).*

*She is interested in the fields of pattern recognition and computer vision especially oriented towards video processing. Her current research projects are on speaker action classification for lecture video analysis and affective computing from multi-channel signals during conversation. She received the best student paper award at the International Conference on Document Analysis and Recognition (ICDAR) 2019.*



### *Editor's note:*

*Fei Xu was the recipient of the 2019 ICDAR Best Student Paper Award. Reports on ICDAR 2019 and its associated workshops are the focus of this issue.*

*~ Jing Dong, IAPR Newsletter EiC*

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

I have a bachelor's degree in the field of Electrical Engineering. For my master's degree, I switched to Computer Science to gain more skills on the software side. Afterward, I was fortunate to join a research project on deceit detection from videos. The goal was to detect if people are lying during a conversation. This was

my gate to enter the field of Pattern Recognition (PR).

Initially, I joined the research project because humans are a complex, uncertain but interesting study target. During the time working on it, I recognized the difficulty and attractiveness of human behavior analysis in general, and at the same time, I gradually learned and implemented different techniques for video processing and statistical models. I wanted to further study human behavior from the mathematical and engineering point of view. With this experience, I got a chance to start my Ph.D. in Computer Science at the Center for Unified Biometrics and Sensors (CUBS) of the University at Buffalo, SUNY.

CUBS is a PR-oriented lab where I am learning state-of-the-art techniques on PR research, especially for human-related topics, which I like. Currently, I have been building knowledge of both computer vision and machine learning methods for video processing, face/pose recognition and affective computing.

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

Studies in human behavior analysis aim at a general understanding of social signals including verbal expression (presentation, speech, conversation, etc.) and non-verbal behavior (facial expression, pose, action, biological signals, etc.). Human behavior has been

studied for years across a variety of scientific disciplines including psychology, medicine, sociology, and others. In computer science, different level tasks such as image processing, feature extraction, classification, and recognition are involved in automated human behavior analysis. Both widely-used heuristic-based methods and deep neural network techniques have exhibited promising performance in some areas of image-based human subject analysis.

Humans are mostly social, and interactional social actions play a vital role in human behavior. Interactional synchrony refers to the case that two or more people will tend to adapt their behavior to each other even in a simple conversation. It has been hypothesized that synchrony between two interacting people is a sign that temporal rapport is built. Synchrony analysis helps to understand human behavior. Positive emotions have been studied as a feature of interactional synchrony. Although emotion recognition has shown promising performance in recent works, many of them are carried out in a controlled lab setting and it is hard to differentiate if the subject is showing a real emotion or not. To understand the underlying complexities of human interactions, more unconscious nuances could be considered

Currently, I am working on two projects related to human behavior analysis, one enhancing the other. The first one mainly focuses on human subject interaction analysis. Cooperating with the Communication department of University at Buffalo, SUNY, we ran an experiment of interactional synchrony detection during a conversation. We recorded multi-channel signals including facial

video, body video, depth video, and the galvanic skin response (GSR) of human subjects. We are investigating PR methods to locate the interactional synchrony during human conversation based on all these signals.

Understanding human actions can not only help understand the human, but also the environment around it. In my second research project, we analyze whiteboard-based lecture videos. In our initial study, we labeled the actions of a single speaker in multiple lecture videos from the AccessMath dataset. We split each video into small action segments. For each segment, we extract motion features from the speaker pose at each frame. An action classifier is trained with these features and then we use it to predict the speaker's actions in test videos. Based on key actions, such as erase and write, we are able to extract a summary of the handwritten content based on keyframes. This work was published in ICDAR 2019.

Currently, we are working on extending our speaker action classification method to work with different speakers and various lecturing environments.

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

IAPR has been supporting many academic events such as

conferences, workshops, and summer schools. All of these provide an open and fair window for the young researchers to be acknowledged and to be advised by experts on their research projects. At the same time, young researchers themselves can also share their research experience.

The year 2020 started with an unusual ongoing pandemic situation. The COVID-19 virus has spread exponentially and globally and it's affecting various areas including economy, industry, agriculture and of course academy. Due to the virus's aggression, many academic events in the coming months are being affected, either canceled or reorganized remotely. This means that many young researchers will miss multiple chances to meet other members of the community and get feedback on their projects. I believe that with help from the IAPR, a platform can be established to allow young researchers to interact with senior members and other young researchers remotely. It can also help to concentrate and disseminate educational resources such as recordings of tutorials, key-note speeches and other presentations from previous events. This can benefit not only the upcoming events, but it will also support academic activities in the future.



Please click [here](#) to go to the University at Buffalo CUBS News website for an article titled, "Facilitating augmented learning using AI: Two CUBS students receive best paper awards at international conference".



From the



*The IAPR ExCo on...*  
**Impact of the COVID-19 pandemic  
on our community**

by [Apostolos Antonacopoulos](#) (UK), IAPR President



**News from the IAPR  
Executive Committee**

- We wish to express our deepest and most sincere condolences to the family, friends, and colleagues of Prof. Reinhard Klette, who passed away on April 3, 2020. (Please see [In Memoriam](#).)
- The ExCo has been discussing the impact of the COVID-19 pandemic on the various IAPR sponsored and endorsed conferences. Remember to check the [IAPR website](#) and those of the specific conference for news and updates.
- [ICPR 2020](#) and the Governing Board meeting there have our special attention (see letter from the IAPR President at right).
- [ICPR 2020](#) received more than 1500 paper submissions during the First Round Review and announced a Second Round with a deadline of July 10, 2020.
- The Nomination Deadline for the J. K. Aggarwal Prize has been extended to September 11, 2020. Please see the official Call for Nominations [here](#).
- The deadline to submit Bids to Host ICPR 2024 has been extended to October 1, 2020. Please see the Call for Bids to Host ICPR 2024 [here](#).
- Stay healthy and at home!

I hope this message finds you and your loved ones well at this time of extraordinary difficulty. We are all experiencing “business not as usual” and trying to cope with having to carry out important work against a backdrop of severe constraints and global uncertainty.

As a scientific community we are well placed to create good from adversity - the data being collected will benefit from our expert analysis. Prior to this crisis, the ExCo was discussing how to stimulate the creation of a new community (and TC?) on pattern recognition in medical data - how timely and how important this proves to be now! Please share with the ExCo any thoughts and suggestions you may have on this. Maybe we can organise a special session at ICPR 2020 to share work-to-date and data?

And speaking of ICPR 2020, like all other events, it has been affected by the worldwide crisis. Our colleagues on the organising team have been making extraordinary efforts to assess and mitigate risks. As you may have seen, the current plan is for ICPR 2020 to take place in the second week of January 2021. This solution considers the ability of participants to attend, the imperative to maintain the expected high scientific quality, the availability of the venue, and the need to minimize financial loss, while keeping a (nearly) biennial schedule for the conference, the Governing Board meeting, and the terms of office for committee chairs and members of the ExCo. As there are still so many unknowns, the ExCo is in constant communication with the ICPR Liaison Committee and with the ICPR 2020 Organisers to monitor risks and update plans. So far, it is great news that on the deadline of the first round of submissions, more papers have been received than in previous ICPRs—our community is more active than ever! Please check the [ICPR 2020 website](#) for the latest information.

While the ICPR is the main event on the IAPR's conference calendar, there are also many summer and winter schools and endorsed and sponsored conferences and workshops. Depending upon when and where these are to be held, some may run as planned while others may move to an online or hybrid in-person/remote format. The IAPR's Conferences & Meetings Committee is following the situation closely.

Perhaps the members of the IAPR Community hardest hit by these conference postponements and changes are the young researchers and PhD students who might miss opportunities to share their work and get feedback from experienced researchers. The ExCo recognizes that the future of the IAPR rests with these early career researchers and will review the ways various conferences are handled to learn some best practices.

I welcome your thoughts and ideas and extend my very best wishes.

Stay healthy, *Apostolos Antonacopoulos*



# In Memoriam



Legacy.com® Guest Book  
<https://www.legacy.com/obituaries/nzherald-nz/obituary.aspx?n=reinhard-klette&pid=195863438>

## Reinhard Klette



January 31, 1950 - April 3, 2020

It is with deep sadness that we learned of the death of Professor Reinhard Klette on April 3rd, 2020. He had just announced his retirement from Auckland University of Technology.

Reinhard was one of the last pioneers of discrete geometry. He was at the forefront of community building in this field. Many of us remember the website he had built at the Centre for Image Technology and Robotics (CITR) and the list of open problems in digital geometry that inspired much research.

His own work had a considerable influence on digital geometry, image analysis, pattern recognition and computer vision. Successive generations of researchers in these fields have been largely inspired by his results, but also by his dynamic and warm personality. Despite his fame, Reinhard always remained accessible to others—especially young researchers—and open to scientific and other discussions; he had a profound humanity. An inexhaustible traveller, he was also keen to introduce us to New Zealand through the many events he organized, bringing together the Asian, American and European communities in pattern recognition. Many of us have collaborated or exchanged with him during conferences (DGCI, IWCI, ICPR, workshops...) and various other events.

His scientific interest and his kindness have marked us a lot. He has been an example for many of us and his passing will leave a great void among all his collaborators.

- David Coeurjolly, Yan Gérard, Yukiko Kenmochi, Bertrand Kerautret, Jacques-Olivier Lachaud, Filip Malmberg, Nicolas Passat, Isabelle Sivignon, and Michael Wilkinson

### Editor's Note:

Within the IAPR, Prof. Reinhard Klette also made his mark.

**Member society from GDR:** In 1989-90, under his leadership as Chairman, the Computer Vision Group in the German Democratic Republic became an IAPR member, and Reinhard served as its representative on the IAPR's Governing Board (GB). This group would merge a few years later with the society from the Federal Republic of Germany—a founding IAPR member—to become a single member society from Germany, Deutsche Arbeitsgemeinschaft für Mustererkennung (DAGM).

**Member society from New Zealand:** Image and Vision Computing New Zealand, the IAPR member society from that country, joined in 1999. Reinhard served as GB member from New Zealand until around 2004 and then again from 2014-16.

**Nominating Committee 2016-18:** To finish out his contributions to the IAPR, Reinhard served on the Nominating Committee that presented the IAPR's current ExCo as part of its slate of nominees.

IAPR Newsletter Volume 12 Number 2 June 1989  
Excerpt from "News in Brief"

Preliminary discussions are now taking place between IAPR and a Computer Vision Group in the German Democratic Republic, Fachausschuss Automatische Bildverarbeitung, which is part of the national engineering society KDT (Kammer der Technik). The approximate membership of this group is 150 and their Chairman, Professor Reinhard Klette, is now exploring the possibility of his group becoming the national IAPR member. We hope to be able to report a successful outcome to these discussions within the next few months.

IAPR Newsletter Spring 1999 Volume 21 No 2  
"New Member for the IAPR"

It is a great pleasure to announce that on February 1, 1999, New Zealand joined the IAPR as its 33rd national member. The New Zealand group on Image and Vision Computing (IVCNZ) presented its membership application and the ballot on this application was issued to the Governing Board in December 1998 with a voting deadline of January 31, 1999. The participation of the Governing Board in this ballot was very large (93%) and the vote was unanimously in favour. The New Zealand national member group has approximately 60 individual members. The GB representative for New Zealand is Reinhard Klette.



# In Memoriam

Thomas Shi-Tao Huang: June 26, 1936 - April 25, 2020



Our beloved Tom (Professor Thomas Shi-Tao Huang) passed away peacefully at his daughter's home in Indiana during the evening of April 25, 2020.

Three months ago, in the company of her family, Tom's wife, Margaret, gently left the world; Tom was extremely sad. Two months later, Tom moved from UIUC, where he had been teaching and living for forty years, to his daughter's home in Indiana. In the last few weeks, Tom enjoyed the company and care of his family and he also continued to follow the development of his students from a distance. And now, three months later, Tom has followed Margaret.

The day before Tom's passing, the priest visited. Tom believed he would go to heaven and meet Margaret again, so he was pleased. On the day of his passing, some of Tom and Margaret's closest friends and students briefly connected with their family through a video call; they prayed and said goodbye to Tom. The family was planning for a future video call, for the many more people that loved Tom and Margaret dearly and wished to say goodbye, but Tom quietly left the world shortly after the first call.

Tom and Margaret had a legendary and rich life. They have left the deepest impressions on the lives of many of us and have a precious legacy for this world. They always cared for everyone, warmly and humbly.

May Tom and Margaret rest in peace in heaven!

- Professor Huang's research family

## Editor's Note:

Prof. Thomas S. Huang was very active within the IAPR and received its highest honor, the King-Sun Fu Prize.

**Governing Board Member:** From 1992-2002, Tom served as one of the Governing Board representatives from the United States.

**Other Committees:** Through the years, in addition to the Governing Board, Tom served on the Awards, Nominating, and the K-S Fu Prize Committees. He was also involved in several ICPRs.

*IAPR Newsletter* July 1993 Volume 15 No 3

Report on "The 4th International Conference on Computer Vision" (excerpt)  
by Maria Petrou, University of Surrey

"There were several amusing quotations from the speakers: Huang, in his introduction: "I don't know what I am talking about!" (somebody else was supposed to give his talk until the last moment)"



*IAPR Newsletter*  
Winter 2000 Volume 22 No 1  
Report on "The 8th Conference on  
Computer Analysis of Images and Patterns"  
Photo of the Invited Speakers

*IAPR Newsletter* April 2012 Winter 2000 Volume 34 No 2

"Lecture Series with presentations by winners of the K.S. Fu Prize"

"The University of Notre Dame is pleased to announce that it will host a series of six seminars during the Fall Semester, presented by previous recipients of the KS Fu Prize." Lecturers: T. Pavlidis, J.K. Aggarwal, T. Huang, J. Kittler, A. Jain, and H. Bunke.

*IAPR Newsletter* Summer 2002 Volume 24 No 3  
"The 2002 King-Sun Fu Prize"

The King-Sun Fu Prize is awarded biennially to a living person in recognition of outstanding contributions to the field of Pattern Recognition and honours the memory of Professor King-Sun Fu who was instrumental in the founding of IAPR and served as its first President. He is widely recognised for his own extensive contributions to the field.

It is with great pleasure that IAPR will award the 2002 prize to Professor Thomas S Huang in Quebec City. The nominator's proposed citation is as follows:

***For Pioneering Contributions to 3D Motion and Structure Estimation from 2D Image Sequences.***

# 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

## IN THIS ISSUE:

[TC3 Neural Networks & Computational Intelligence](#)

[TC7 Remote Sensing and Mapping](#)

[TC11 Reading Systems](#)

[TC16 Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis](#)

[TC18 Discrete Geometry and Mathematical Morphology](#)

[TC19 Computer Vision for Cultural Heritage Applications](#)

## IAPR TC3 Neural Networks & Computational Intelligence

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

[Edmondo Trentin](#), Chair

[Markus Hagenbuchner](#), Vice Chair

Due to the COVID-19 outbreak, we have some news regarding the 9th Workshop on Artificial Neural Networks in Pattern Recognition (ANNPR 2020, <https://iapr.org/annpr2020>), hosting the biennial meeting of TC3.

The event is still scheduled to take place at ZHAW School of Engineering, Winterthur, Switzerland, on September 2nd-4th, 2020. Nonetheless, the organizers are monitoring closely the situation caused by the pandemic, and if necessary they are ready to convert the workshop to an online format (scheduled on the same date). For no reason will ANNPR 2020 be postponed or canceled.

Proceedings will be published by Springer. The submission of papers is currently open, and its deadline has been extended to June 10th. The whole CFP can be found at <https://annpr2020.ch/cfp/> and a contact request form is available online at <https://annpr2020.ch/contact/>.

Recently TC3 has endorsed the Special Issue on Computational Algebraic Topology and Neural Networks in Computer Vision of the journal "Mathematics" ([https://www.mdpi.com/journal/mathematics/special\\_issues/Computational\\_algebraic\\_topology\\_neural\\_networks\\_computer\\_vision](https://www.mdpi.com/journal/mathematics/special_issues/Computational_algebraic_topology_neural_networks_computer_vision)). The deadline for manuscript submissions is on December 31, 2020.

Check out our website at <http://iapr-tc3.diism.unisi.it/index.html> for all the news on the TC3 activities. Therein you can learn about the TC3, and possibly join us. The TC3 Manifesto (on "off-the-mainstream" research) is available at <http://iapr-tc3.diism.unisi.it/Research.html>, as well.



# More IAPR Technical Committee News

IN THIS ISSUE:

[TC3 Neural Networks & Computational Intelligence](#)  
[TC7 Remote Sensing and Mapping](#)  
[TC11 Reading Systems](#)  
[TC16 Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis](#)  
[TC18 Discrete Geometry and Mathematical Morphology](#)  
[TC19 Computer Vision for Cultural Heritage Applications](#)

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 remote sensing data collected from space, air and ground, and fosters academic collaboration and networking among related communities.

One of our main activities is the organization of events focusing on the interface between pattern recognition and remote sensing. We are therefore happy to announce that the International Workshop on Pattern Recognition in Remote Sensing (PRRS 2020) will take place again. It is held in conjunction with the International Conference on Pattern Recognition (ICPR 2020) (<https://iapr.org/icpr2020>) in Milan, Italy, on January 10, 2021. The workshop is organized by Ribana Roscher, Gabriele Cavallaro, Jie Shan, Eckart Michaelsen, and Uwe Stilla and is co-sponsored by the International Society for Photogrammetry and Remote Sensing (ISPRS). We invite interested researchers to submit a full paper. News will be posted on our website: <http://iapr-tc7.ipb.uni-bonn.de/>.



**11th IAPR**  
**Workshop on Pattern Recognition in Remote Sensing**  
as part of ICPR 2020

**Paper submission deadline: October 10**  
Milan, Italy. January 10, 2021




Information from Imagery



**ICPR 2020**  
25th INTERNATIONAL CONFERENCE ON PATTERN RECOGNITION  
Milan, Italy 10 | 15 January 2021  
"putting Artificial Intelligence to work on patterns"

COVID-19  
**PENSA POSITIVO**  
Think positive



IAPR   
Technically Co-Sponsored by  
 IEEE  
 IEEE COMPUTER SOCIETY

# And More IAPR Technical Committee News

## IN THIS ISSUE:

[TC3 Neural Networks & Computational Intelligence](#)  
[TC7 Remote Sensing and Mapping](#)  
[TC11 Reading Systems](#)  
[TC16 Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis](#)  
[TC18 Discrete Geometry and Mathematical Morphology](#)  
[TC19 Computer Vision for Cultural Heritage Applications](#)



IAPR TC11 - Reading Systems  
<http://www.iapr-tc11.org>

 [https://twitter.com/iapr\\_tc11](https://twitter.com/iapr_tc11)

[Dimosthenis Karatzas](#), Chair  
[Gernot Fink](#), Vice Chair  
[Andreas Fischer](#), Communications  
[Joseph Chazalon](#), Dataset Curator  
[Michael Blumenstein](#), Education Officer

TC11 has two events planned for 2020. The 14th Int. Workshop on Document Analysis Systems (DAS) 2020 was planned to take place in Wuhan, China, in May 2020, while the Int. Conference on Frontiers in Handwriting Recognition (ICFHR) 2020 is planned to take place in Dortmund, Germany in September 2020.

Obviously, the worldwide spread of COVID-19 and its implications has forced TC11 and the organizers of these events to take action and, when necessary, look for alternative, creative solutions for hosting these events. We are very happy to report that we will be able to organize both events.

DAS 2020 will take place fully online, and will be moved to new dates at the end of July. While we would prefer to have a live, in-person workshop, we see many nice opportunities from moving online, including a low-cost (maybe free) registration for participants and an environmentally friendly event. The workshop will maintain all its usual elements, including invited talks and discussion groups (a key aspect of DAS), which will take place online, using new tools and dynamics to full advantage.

Importantly, the deadline for submitting short papers to DAS 2020 has been extended to June 1st, following the change of dates. We hope that the combination of this extension and the virtual character of the workshop will create an opportunity to help connect PhD students and young researchers to our international research community.

ICFHR 2020 is slightly later in the calendar. We are currently planning for a physical meeting, or at least a combined event, but of course will be closely monitoring the situation to ensure we offer ample ways to participate.

You can find up to date information on the web sites of both events:

- DAS 2020: <https://iapr.org/das2020>
- ICFHR 2020: <http://icfhr2020.org/>

Best wishes to everyone – keep safe and keep the research going.



And still  
^

# More IAPR Technical Committee News

IN THIS ISSUE:

[TC3 Neural Networks & Computational Intelligence](#)

[TC7 Remote Sensing and Mapping](#)

[TC11 Reading Systems](#)

[TC16 Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis](#)

[TC18 Discrete Geometry and Mathematical Morphology](#)

[TC19 Computer Vision for Cultural Heritage Applications](#)

## IAPR TC16 Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis <http://iapr-tc16.isti.cnr.it>

**Davide Moroni, Chair**  
**Vera Yashina and Deitrich Paulus, Vice Chairs**  
**Igor Gurevich, Honorary Chair**

IAPR-TC16 is glad to announce that the **Image Mining. Theory and Applications Workshop (IMTA VII)** will take place as a satellite event of ICPR 2020 (Milan, Italy, January 10-15, 2021).

Image mining methods are able to extract knowledge and to highlight patterns, enabling very important applications, such as medical diagnosis, robotics, technical diagnosis and non-destructive testing, precision agriculture, novel industrial support systems, remote sensing, and many others. The mathematical foundations, means and tools are of primary importance for the field. The mathematical aspects of image analysis and pattern recognition, mainly of image mining—a leading line of the modern mathematical theory of image analysis—are the subject of IMTA VII.

Technological advances and increased storage capability support the growth of large and detailed, but possibly noisy, image datasets. Hence, IMTA VII topics are of utmost relevance, being the perfect humus for cross-fertilization with other emerging fields, both theoretical and applied. ICPR, being recognized as the main scientific event in pattern recognition, image analysis and allied scientific and technological areas, is an excellent venue for IMTA VII.

The workshop is intended to cover, but it is not limited to, the following topics:

- Methodological advances in image analysis and pattern recognition;
- New Mathematical Techniques in Image Mining;
- Image Models, Representations and Features;
- Automation of Image and Data Mining;
- Artificial Intelligence Techniques in Image Mining;
- Applied problems.

The full texts of the papers presented at the IMTA VII, selected and recommended by the IMTA Committee, will be published in 2021 in a Special Issue of the International Journal of the Russian Academy of Sciences “Pattern Recognition and Image Analysis. Advances in Mathematical Theory and Applications” (PRIA).

Notice, that due to the COVID19 outbreak, ICPR 2020, initially planned for September 2020, has been postponed to January 10-15, 2021. Therefore, IMTA-VII has been moved to January 11, 2021.

For updated papers submission instructions and important dates, please see:

<http://iapr-tc16.isti.cnr.it/IMTA2020>

**IMTA VII**

**Image Mining. Theory and Applications**  
Milan, Italy, January 11, 2021



*In conjunction with the 25th International Conference on Pattern Recognition (ICPR 2020), Milan, Italy*

# ^ More IAPR Technical Committee News

## IN THIS ISSUE:

[TC3 Neural Networks & Computational Intelligence](#)  
[TC7 Remote Sensing and Mapping](#)  
[TC11 Reading Systems](#)  
[TC16 Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis](#)  
[TC18 Discrete Geometry and Mathematical Morphology](#)  
[TC19 Computer Vision for Cultural Heritage Applications](#)

## IAPR TC18 Discrete Geometry and Mathematical Morphology

<https://tc18.org>

**Bertrand Kerautret, Chair**  
**Michael Wilkinson, Vice Chair**  
 email: [tc18@tc18.org](mailto:tc18@tc18.org)

 [https://twitter.com/IAPR\\_TC18](https://twitter.com/IAPR_TC18)

TC18 News for this issue of the IAPR Newsletter centers around upcoming conferences: the First IAPR International Conference on Discrete Geometry and Mathematical Morphology (DGMM 2020) and the Third Workshop on Reproducible Research in Pattern Recognition (RRPR 2020).



## 1st IAPR International Conference on Discrete Geometry and Mathematical Morphology

December 14-17, 2020  
Uppsala, Sweden

DGMM 2020 is the first joint event between the two main conference series of IAPR TC18, the International Conference on Discrete Geometry for Computer Imagery (DGCI), with 21 successful previous editions (see [DGCI 2019 report](#) in this issue), and the International Symposium on Mathematical Morphology (ISMM), with 14 successful previous editions. DGMM offers the opportunity to share and discuss novel high-quality research results within the fields of discrete geometry and mathematical morphology and their applications to image processing and image analysis. Both theoretical and application-focused contributions related to these topics are welcome. A day of pre-conference workshops is also planned. More details will be available soon.

**Submission deadlines:** Title and abstract—June 1, 2020; Full paper—June 10, 2020

**Proceedings:** All submitted papers will be subject to a full peer-review. Accepted papers will be included in the conference proceeding, published in the Lecture Notes in Computer Science series by Springer.

### Welcome to Uppsala in December!

*Filip Malmberg, General Chair*  
*Nataša Sladoje, Program Chair*  
*Joakim Lindblad, Program Chair*



## RRPR 2020 : Third Workshop on Reproducible Research in Pattern Recognition

11 Jan 2021 Milan (Italy)

Due to COVID-19 and with the shift of ICPR 2020 to January 2021, the RRPR will be held on January 11, 2021, in Milan, Italy. Two rounds of deadlines are now planned: June 30th and October 10th. See more details here: <https://rrpr2020.sciencesconf.org>.

 [https://twitter.com/RRPR\\_Workshop](https://twitter.com/RRPR_Workshop)



# More IAPR Technical Committee News

IN THIS ISSUE:

- [TC3 Neural Networks & Computational Intelligence](#)
- [TC7 Remote Sensing and Mapping](#)
- [TC11 Reading Systems](#)
- [TC16 Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis](#)
- [TC18 Discrete Geometry and Mathematical Morphology](#)
- [TC19 Computer Vision for Cultural Heritage Applications](#)

## IAPR TC19 Computer Vision for Cultural Heritage Applications

[www.cvl.iis.u-tokyo.ac.jp/IAPR-TC19](http://www.cvl.iis.u-tokyo.ac.jp/IAPR-TC19)

**Guillaume Caron**, Chair

**Olga Regina Pereira Bellon**, Vice Chair

**Advisors:** Katsushi Ikeuchi, Roberto Scopigno, El Mustapha Mauaddib, and Takeshi Oishi

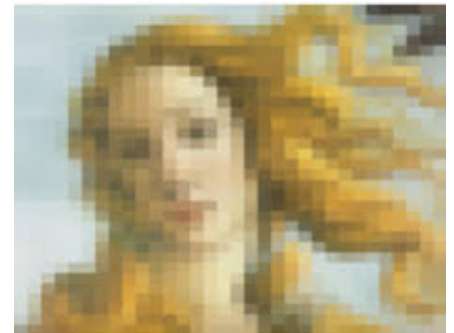
### ICPR 2020 workshop on Fine Art Pattern Extraction and Recognition: FAPER 2020

TC19 endorses the FAPER2020 workshop organized by Gennaro Vessio (University of Bari, Italy), Giovanna Castellano (University of Bari, Italy) and Fabio Bellavia (University of Palermo, Italy), on January, 11th 2021, in conjunction with ICPR 2020.

FAPER2020 focuses on fine art with aesthetic purposes as paintings, sculptures, and architecture. Digitized collections of the latter and recent advances in pattern recognition and computer vision, lead computer vision and pattern recognition researchers working with the art community to provide automatic tools to analyse and further understand fine arts.

Thus, the aim of the workshop is to provide an international forum for those who wish to present advancements in the state of the art, innovative research, ongoing projects, and academic and industrial reports on the application of visual pattern extraction and recognition for the better understanding and fruition of fine arts. The workshop solicits contributions from diverse areas such as pattern recognition, computer vision, artificial intelligence and image processing until October, 10th 2020.

For more information, please visit: <https://sites.google.com/view/faper-workshop>



## FAPER2020





**Call for Papers**  
and  
**Calls for Proposals for Tutorials, and Demos and Exhibits**

**ICPR 2020**

**25th INTERNATIONAL CONFERENCE ON PATTERN RECOGNITION**  
**Milan, Italy 10 | 15 January 2021**

*"putting Artificial Intelligence to work on patterns"*

<https://iapr.org/icpr2020>

**COVID-19**  
**PENSA POSITIVO**  
**Think positive**

IAAPR  
Technically Co-Sponsored by  
IEEE  
IEEE COMPUTER SOCIETY

## IMPORTANT DATES:

**April 15, 2020** - More than 1500 papers were submitted by this first round review deadline!  
**July 10, 2020** - Paper submission deadline for second round review  
**September 15, 2020** - Tutorial proposal deadline  
**October 10, 2020** - Demo and Exhibit proposal deadline  
**January 10-15, 2021**: Conference dates

## Organizing Team:

### General Chairs:

**Rita Cucchiara** (UNIMORE, Italy), **Alberto Del Bimbo** (Univ. of Firenze, Italy), and **Stan Sclaroff** (Boston Univ., USA)

### Program Chairs:

**Kim Boyer** (Univ. of Albany, USA), **Brian Lovell** (Univ. of Queensland, Australia),  
**Marcello Pelillo** (Univ. of Ca' Foscari Venezia, Italy), **Nicu Sebe** (Univ. of Trento, Italy),  
**René Vidal** (Johns Hopkins Univ., USA), **Jingyi Yu** (Shanghai Tech. Univ., China)

### Track Chairs:

#### 1. Artificial Intelligence, Machine Learning for Pattern Analysis

Ehsan Elhamifar (Northeastern Univ. USA),  
 Zhouchen Lin (Peking Univ., China),  
 Fabio Roli (Univ. of Cagliari, Italy),  
 Marina Meila (Univ. of Washington, USA)

#### 2. Biometrics, Human Analysis and Behavior Understanding

Octavia Camps (Northeastern Univ., USA)  
 Stan Z. Li, (Chinese Academy of Sciences, China)  
 Massimo Tistarelli (Univ. of Sassari, Italy)  
 Yunhong Wang, (Beihang Univ., China)

#### 3. Computer Vision Robotics and Intelligent Systems

Lale Akarun (Bogazici University, Turkey),  
 Luigi Di Stefano (Univ. of Bolobna, Italy)  
 Javier Ruiz-del-Solar (Univ. of Chile, Chile)  
 Yoichi Sato (Japan)

#### 4. Media Analysis and Understanding

Simone Marinai (Univ. of Firenze, Italy)  
 Kyong Mu Lee (Seoul National Univ., Korea)  
 Elisa Ricci (Univ. of Trento, Italy)  
 Cees Snoek, (Univ. of Amsterdam, The Netherlands)  
 Changsheng Xu (Chinese Academy of Sciences, China)

#### 5. Image and Signal Processing

Sebastiano Battiato (Univ. of Catania Italy)  
 Andrea Cavallaro (Queen Mary Univ. of London, UK)  
 Ana Fred (Univ. of Lisbon, Portugal)  
 Shiguang Shan (Beijing Univ., China)

### Tutorial Chairs

Vitorio Murino (Univ. of Verona, Italy)  
 Sudeep Sarkar (Univ. of South Florida, USA)

### Challenge Chairs

Marco Bertini (Univ. of Firenze, Italy)  
 Hugo Jair Escalante (INAOE and CINVESTAV  
 National Polytechnic Institute of Mexico)

### Women in ICPR Chairs

Alexandra Branzan Albu (Univ. of Victoria, Canada)  
 Maria De Marisco (Univ. Roma La Sapienza, Italy)

### Workshop Chairs

Giovanni Maria Farinella (Italy)  
 Tao Mei (China)

### Demo & Exhibit Chairs

Lorenzo Baraldi (Univ. Modena Reggio Emilia, Italy)  
 Bruce Maxwell (Colby College, USA)  
 Lorenzo Seidenari (Univ. of Firenze, Italy)

### Local Chairs

Matteo Matteucci (Politecnico di Milano, Italy)  
 Paolo Napoletano (Univ. of Milano Bicocca, Italy)



# Meeting Reports

## ICDAR 2019 Section

In this section:

- [ICDAR 2019](#)
- [GREC 2019](#)
- [HIP 2019](#)
- [ICDAR-OST 2019](#)
- [IWCDF 2019](#)
- [HDI 2019](#)
- [CBDAR 2019](#)



# ICDAR 2019

15th International Conference on Document Analysis and Recognition  
20-25 September 2019 | International Convention Centre Sydney, Australia

Honorary Chair:

Ching Y. Suen

Concordia University (Canada)

General Chairs:

Michael Blumenstein, University of Technology Sydney, Australia

Umapada Pal, Indian Statistical Institute, Kolkata, India.



by the General Chairs

The International Conference on Document Analysis and Recognition is a biennial conference, and the 15th iteration was held in the beautiful city of Sydney, Australia. Sydney is truly an international city, hosting world-famous icons such as the Sydney Harbour Bridge and the Sydney Opera House. There are also many more natural wonders and cultural sites in the beautiful state of New South Wales, including the

Blue Mountains and Hunter Valley (famous for its wines).

ICDAR is a flagship conference series and the largest international gathering for researchers, scientists and practitioners in the document analysis community. The conference is endorsed by the IAPR-TC 10/11. Established nearly three decades ago, ICDAR began in St. Malo, France in 1991. Since that time, the document analysis community has met in Tsukuba, Japan ('93), Montreal, Canada ('95), Ulm, Germany ('97),

Bangalore, India ('99), Seattle, Washington ('01), Edinburgh, UK ('03), Seoul, Korea ('05), Curitiba, Brazil ('07), Barcelona, Spain ('09), Beijing, China ('11), Washington DC, USA ('13), Nancy, France ('15) and Kyoto, Japan ('17).

Like past ICDARs, ICDAR 2019 also received high-quality paper submissions. This year we received 403 papers, and based on the reviews our Program Chairs accepted 52 papers for oral presentation (12.90% acceptance rate) and 176 papers as poster

# Meeting Reports: ICDAR 2019 Section, cont'd

presentations (43.67% acceptance rate).

Oral presentations were grouped by subject into 10 sessions: Handwritten Text Recognition, Document Image Processing, Document Understanding, Table Analysis, Text Detection and Recognition, Mathematical Expression and Text Recognition, Layout Analysis, Applications of Document Analysis, Script Identification and Authentication, and Signature Verification. We also had three poster sessions. In addition to the regular papers, reports of 18 competitions in different areas of document analysis and recognition were presented in oral and poster sessions at this ICDAR.

Nine workshops were organized and hosted at the University of Technology Sydney during September 20-22, 2019, as part of this conference (see reports on many of them in this *IAPR Newsletter* ICDAR 2019 Special Issue). Also, five tutorial talks were delivered.

One novel initiative in ICDAR 2019 was the special session for the presentation of papers from an ICDAR/ICDAR Special Issue, which was a set of high-quality standard journal papers.

In addition, and for the first time, the Workshops and the main Conference Proceedings were published separately via the IEEE Computer Society's Conference Publishing Services (CPS). This further enhances the quality of our archived ICDAR publications.

## Keynotes:

This conference was highlighted by three keynote talks. The first

keynote was delivered by the 2019 IAPR/ICDAR Outstanding Achievements Award winner Andreas Dengel (see related article on Page 1 of this issue), a Professor from the German Research Center for Artificial Intelligence (DFKI). Other keynotes were presented by Dr. Qiang Huo, a Partner Research Manager of the Speech Group at Microsoft Research Asia (MSRA), Beijing, China, who talked about OneOCR for Digital Transformation and by Enrique Vidal, Professor of Computer Science, Universidad Politécnic de Valencia, Spain, who discussed text search and information retrieval in large historical collections of un-transcribed manuscripts.

## Paper Awards:

There were three categories of paper awards in ICDAR-2019. For each category, a runner-up award was also given.

### Best Paper Award:

Winner: "PubLayNet: largest dataset ever for document layout analysis" by Xu Zhong, Jianbin Tang and Antonio Jimeno Yebes.



Runner-Up: "An End-to-end Video Text Detector with Online Tracking" by Hongyuan Yu, Chengquan Zhang, Xuan Li, Junyu Han, Errui Ding and Liang Wang.



### Best Student Paper:

Winner: "Content Extraction from Lecture Video via Speaker Action Classification based on Pose Information" by



Fei Xu, Kenny Davila, Srirangaraj Setlur and Venu Govindaraju (see related article by Fei Xu in this issue).

Runner-Up: "Deep Network with Pixel-level Rectification and Robust Training for Handwriting Recognition" by Shanyu Xiao, Liangrui Peng, Ruijie Yan and Shengjin Wang.



### Best Poster:

Winner: "Brno Mobile OCR Dataset" by Martin Kiss, Michael Hradis and Oldrich Kodym



Runner-Up: "CASIA-AHCDB: A Large-scale Chinese Ancient Handwritten Characters Database" by Yue Xu, Fei Yin, Da-Han Wang et. al.



A large event like ICDAR depends almost exclusively on the team of volunteers who work hard on the program, infrastructure, and facilities. We would first like to thank the program co-chairs, Cheng-Lin Liu, Andreas Dengel and Rafael Dueire Lins who worked tirelessly towards creating a rigorous and interesting technical program. We would also like to thank the Chairs of the workshops, tutorials, competitions and those supporting the publicity of ICDAR for their help and support. We gratefully acknowledge the financial support of our sponsors including IAPR for helping to reduce the costs and providing various awards. We would like to thank the sponsorship chairs and Arinex, our Professional

## Meeting Reports: ICDAR 2019 Section, cont'd

Conference Organizer, for helping us towards sponsorships and organization; publication chairs Wataru Ohyama and Giuseppe Pirlo; Finance Chair Wenjing Jia; and Web Chair Parikshit Acharya. Our special thanks to Organizing Chairs Nabin Sharma and Sean He for their endless support to make this event successful. Finally, we would like to express our deep

appreciation for the valuable guidance from our Honorary Chair, Prof. Ching Y. Suen.

Our sincere thanks to all the researchers who have showed interest in this ICDAR by sending contributed papers, tutorial proposals and by registering in competition tracks. Thanks also to the Program committee members, reviewers and local

organizing committee members for their strong support and active participation. Last but not the least, our special thanks are due again to our valued sponsors of the conference.

The 2019 edition of ICDAR was a great success, and we hope to see all of our research colleagues again in the 16th ICDAR at Lausanne, Switzerland, in 2021.



### 2019 ICDAR Outstanding Achievements Award



*Presented to Prof. Dr. Andreas Dengel "for contributions in semantic technologies applied to reading systems, the impact of his innovative solutions in the socio-economic sectors, and his leadership and strategic vision of the document analysis community."*

### 2019 ICDAR Young Investigator Awards



*Presented to Dr. Faisal Shafait "for his outstanding contributions to document image analysis and computational forensics."*



*Presented to Dr. Xiang Bai "for his outstanding contributions to scene text understanding."*



## 13th IAPR International Workshop on Graphics Recognition

September 20-21, 2019, Sydney, Australia

<https://iapr.org/grec2019>



### General Chair:

Jean-Christophe BURIE – La Rochelle Université, France

### Program Chairs:

Gunther Drevin – North-West University, South-Africa

Partha Pratim Roy – Indian Institute of Technology, Roorkee, India

K.C. Santosh – University of South Dakota, USA

by Jean-Christophe Burie, General Chair

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 workshops enjoy strong participation from researchers in both industry and academia.

Graphics Recognition is a subfield of document image analysis that deals with graphical entities in engineering drawings, comics, musical scores, sketches, maps, architectural plans, mathematical notation, tables, diagrams etc.

The aim of this workshop is to achieve a very high level of interaction and creative discussion among participants, maintaining a « workshop » spirit, and not being tempted by a « mini-conference » model.

The workshop comprised several sessions dedicated to specific topics related to graphics in document analysis and graphic recognition. Each session began with an introductory talk by the session chairs, describing the state-of-the-art, putting the

presented talks in a more global perspective, and stating the current open challenges of session topics. Then this is followed by a number of short talks that contributed by proposing solutions to some of the questions or presenting results of the speaker's work. Each session was concluded by a panel discussion.

Previous GREC workshops were held at Penn State University (USA, 1995), Nancy (France, 1997), Jaipur (India, 1999), Kingston (Canada, 2001), Barcelona (Spain, 2003), Hong Kong (China, 2005), Curitiba (Brazil, 2007), La Rochelle (France, 2009), Seoul (South Korea, 2011), Lehigh University (USA, 2013), Nancy (France, 2015), Kyoto (Japan, 2017).

For this 13th edition of GREC, the authors had the opportunity to submit short or long papers depending of the maturity of their research. The PC selected 23 papers from eight countries, 17 long papers and six short papers. Each submission was reviewed by two experts. We would like to take this opportunity to thank the program committee members and sub-reviewers for their meticulous efforts.

For this edition, we had hoped to highlight three topics related to graphic recognition in order to organize special sessions on: Music Scores analysis and recognition, Comics Analysis and Understanding, and Sketch Recognition and Understanding. However, only one paper on sketch analysis and one paper on music score were submitted. So, only a special session dedicated to Comics Analysis and Understanding was proposed.

Finally, we have included in this edition of GREC, a round-table with two industrial and two academic participants in order to discuss the future of Graphics Recognition and the impacts of artificial intelligence.

The workshop had over 100 highly interactive participants on the first day. The second day, owing the start of other ICDAR workshops, attendance was around 50 participants. Full access to the program and list of presented papers is available from the GREC 2019 website (<https://iapr.org/grec2019>). Long papers have been published in the ICDAR proceedings. The short papers are available on the GREC 2019 website.



## General Chairs:

[Stefan Pletschacher](#), PRImA Research, University of Salford (UK)

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

[Christian Clausner](#), PRImA Research, University of Salford (UK)

[Clemens Neudecker](#), Staatsbibliothek zu Berlin - Preußischer Kulturbesitz (Germany)

by the General Chairs

The Fifth International Workshop on Historical Document Imaging and Processing (HIP'19) was held in conjunction with ICDAR 2019 in Sydney, Australia. It followed the tradition of previous editions that took place in Beijing (2011), Washington (2013), Nancy (2015), and Kyoto (2017). Interest in HIP19 was absolutely fantastic, with about 120 delegates participating in the workshop.

Papers presenting original research in the general field of analysis and processing of historical documents—ranging from Imaging and Image Acquisition, Digital Archiving Considerations, Document Restoration/Improving readability, Content Extraction, Family History Documents and Genealogies to Automated Classification, Grouping and Hyperlinking of Historical Documents—were solicited for the scientific programme. The quality of submitted papers was very impressive. Out of 24 submissions 15 were accepted for presentation at the workshop and included in the proceedings. The 24 papers

submitted represented thirteen countries, some with shared authorship: Chile (1), China (1), Czech Republic (1), France (6), Germany (5), Indonesia (2), Japan (4), Norway (1), Pakistan (1), Switzerland (1), Spain (1), United Kingdom (1), and USA (2). Each submitted paper was carefully peer-reviewed by two to three researchers in the field from the equally internationally diverse programme committee.

Machine learning, such as convolutional and recurrent neural networks, continued to be an important topic in the submissions. Related to this were numerous submissions on training, new datasets and crowdsourcing in the context of historical documents. Finally, it could be observed that research has become much more diverse with regard to covered languages and scripts as the field evolves. As in previous years, the HIP'19 proceedings have been published in the ACM Digital Library and are now available at <https://dl.acm.org/citation.cfm?id=3352631>.

The scientific programme of the

workshop consisted of the main event on day one and a visit of the University of Technology Sydney (UTS) Library with a tour and short presentation on day two. The main workshop programme (single track, all oral presentations) included sessions on Datasets; Training; Forms, Tables, Pattern Spotting; HTR, Matching, Layout Analysis as well as a discussion round on challenges and trends in the field. A number of authors shared their presentation slides which are now available at <https://www.primaresearch.org/hip2019/program> together with the Mentimeter discussion questionnaire results.

We would like to thank all authors, reviewers, participants and everyone else who had a hand in HIP'19 for contributing to a very successful event. Special thanks go out to the sponsor FamilySearch for their most generous and continued support of the HIP workshop series as well as the ICDAR 2019 organisers for taking care of the local arrangements and general coordination with the main conference.

**ICDAR-OST 2019  
2nd International Work-  
shop on  
Open Services and Tools for  
Document Analysis**

September 21, 2019, Sydney, Australia  
<https://sites.google.com/view/icdar-ost2019/>

**Workshop Chairs:**

Fouad Slimane, Lars Vögtlin, and  
Marcel Gygli, U. of Fribourg, Switzerland  
Marcus Liwicki, Luleå U. of Tech., Sweden

by Fouad Slimane and Lars Vögtlin

ICDAR-OST 2019 was held in conjunction with the ICDAR 2019. The first edition of ICDAR-OST was held in Kyoto (2017).

The ICDAR-OST workshop was a great opportunity for researchers to meet colleagues and to share new ideas and knowledge about open-services and tools. In Sydney, we were happy to welcome over 50 participants to the workshop.

Thanks to the 30 members of the program committee, each submitted paper was carefully peer-reviewed by two to three knowledgeable researchers. 12 papers were submitted from different countries of which nine papers were accepted. They were presented in three oral sessions spread over the entire day. At the end of the Workshop we had a very stimulating discussion lead by Ashok Popat, whom we want to thank again at this point.

An interesting keynote speech about recent research was given by Dr. Christian Clausner (PRImA Research Lab-University of Salford, Manchester), followed by highly interactive discussions.

ICDAR-OST'19 was, thanks to the participants, a highly interactive workshop with many fruitful discussions concerning open-services and tools.



**Chairs:**

Nicolas Sidere : La Rochelle University, France  
Chawki Djeddi : Larbi Tebessi University, Algeria  
Jean-Marc Ogier : La Rochelle University, France  
Imran Siddiqi : Bahria University, Islamabad, Pakistan  
Utpal Garain : Indian Statistical Institute; Kolkata, India  
Haikal El Abed : Technische U. Braunschweig, Germany

Everywhere around the world, industry and government processes are increasingly digitized. Document management systems and digital safe-boxes are particularly concerned with these questions, since documents generally remain the basis of many decisions for transactions, contracts and communication. Documents also remain the proof for many legal issues. As a consequence, it becomes absolutely essential to develop computational forensic science applied to documents and to create conditions for protecting documents, for confirming their authenticity and for detecting frauds.

IWCDF 2019 sought to address the theoretical and practical work related to this field and to create a space for discussion on issues in areas such as document and speech processing, digital security, biometry, forensic sciences. About 25-30 people attended the workshop.

Like in the previous years, the workshop was a place for extensive discussions of academic and industrial work, documenting the advances in the related fields and creating mutual collaboration on related areas. Interaction among practitioners and academic researchers received special attention in this workshop.

Each of the submissions received for this workshop was reviewed at least three times. The program committee took into account the relevance of the papers to the workshop, the technical merit, the potential impact, and the originality and novelty. From these submissions, and the reviews, five papers were selected for oral presentation at the workshop.

The workshop also included one keynote presentation, given by Prof Faisal Shafait of the National University of Sciences and Technology (NUST), Islamabad, Pakistan, entitled "Document Forgery Detection using Hyperspectral Imaging".

HDI 2019

## 2nd International Workshop on Human-Document Interaction

September 22, 2019, Sydney, Australia

<http://www.cvc.uab.es/hdi2019/?c=home>

### Workshop Chairs:

Mickaël Coustaty (L3i Laboratory, University of La Rochelle, France)

Andreas Dengel (German Research Center for Artificial Intelligence, Germany)

Dimosthenis Karatzas (Computer Vision Centre, UAB, Spain)

Koichi Kise (Osaka Prefecture University, Japan)

Fernando Vilariño (Computer Vision Centre, UAB, Spain)

Following the positive feedback and interest of the first edition of the HDI workshop, the 2nd International Workshop on Human-Document Interaction was focused on how humans interact with written information around them, and the interfaces between users and documents.

A number of recent developments point to a coming change of paradigm in the way we interact with written information around us. Physical and digital documents are finally settling to coexist in peace - connecting the two is empowering for both sides. Technology advances, such as in augmented reality, permit bringing forms of digital interaction to the physical world and vice versa, while the linking of the physical and the digital worlds is done in an increasingly more fluid and realistic manner. At the same time, a new generation of readers, conditioned by the conveniences offered by electronic content and the new media types, have developed distinct reading behaviours and new ways to interact with written content. Written content itself is becoming more dynamic and possible to adapt and change depending on the delivery methods used.

In this context, this second edition was organized in an interactive way in order to share ideas and to foster discussion and debate between the Document Image Analysis and Recognition and the Human-Computer Interaction communities.

Around 30 people attended the workshop, which comprised two oral sessions (six papers presented), one keynote by Dr.

Tilman Dingler (University of Melbourne, Australia), and a panel discussion where all the workshop members shared their ideas about the future of this workshop. The next step will be to extend this workshop into a Human-Computer Interface conference.

The Chairs want to thank all the participants for the interactive discussions exchanged during the workshop.

### HDI 2019 Technical Program

0900 – 0910 Welcome

0910 – 1030 Oral session 1

- "User interface for text and non-text classification" – Thanh Lam Thi Xuan, Anh Le Duc and Masaki Nakagawa
- "Eye-Movements during information extraction from administrative documents" – Helena Muñoz Escudero, Fernando Vilarino and Dimosthenis Karatzas
- "Spatialized and Interactive Concurrent Speech for Web Pages Non Visual Skimming" – Fabrice Maurel, Stéphane Ferrari, Gaël Dias, Emmanuel Giguët and Judith Jeyafreeda Andrew
- "Self-confidence Estimation on Vocabulary Tests with Stroke-level Handwriting Log" – Takanori Maruichi, Shoya Ishimaru and Koichi Kise

1030 – 1100 Coffee Break

1100 – 1150 Invited Talk

- "The Past, Present, and Future of Reading: Building Systems to Support Reading Activities" - Dr Tilman Dingler, University of Melbourne, Australia

1150 – 1230 Oral session 2

- "Making DIA Accessible to Non-experts: Designing a Visual Programming Language for Document Image Analysis" – Vinodh Rajan and H. Siegfried Stiehl
- "Topic classification and document complexity analysis for vocabulary learning" – Francisco Cruz, Mickael Coustaty, Olivier Augereau, Koichi Kise and Journet Nicholas

1230 – 1300 Closing Remarks



CBDAR 2019

## 8th International Workshop on Camera-Based Document Analysis & Recognition

September 22, 2019, Sydney, Australia

<https://cbdar2019.univ-lr.fr>



[https://twitter.com/cbdar\\_workshop](https://twitter.com/cbdar_workshop)

### Workshop Organizers:

[Dr. Lluís Gómez i Bigordà](#), Computer Vision Centre, Spain

[Dr. Muhammad Muzzamil Luqman](#), L3i Laboratory, La Rochelle University, France

by Muhammad  
Muzzamil Luqman

CBDAR 2019 had the main aim of providing a natural link between document image analysis and the wider computer vision community.

CBDAR 2019 received 13 submissions, coming from nine countries (Australia, Brazil, Canada, China, France, India, Spain, Russia, USA). Taking into account the recommendations of the Program Committee members, we selected 10 papers for presentation in the workshop, resulting in an acceptance rate of ~70%.

The participation of attendants from both academia and industry has always remained an essential aspect of CBDAR workshop, and the programme was carefully crafted to appeal to both. The technical program of CBDAR 2019 comprised of 10 oral presentations in three sessions.

The CBDAR 2019 best paper award with a cash prize was presented to the paper titled "Summarizing Lecture Videos by Key Handwritten Content Regions", by Bhargava Urala Kota et al.



Understanding”  
by Professor C. V.  
Jawahar (International  
Institute of Information  
Technology, India).

The workshop was very well attended. Despite many parallel workshops, there was an average presence of more than 50 participants at the CBDAR 2019 during the whole day.

Apart from the presentation of new scientific work, the workshop included a special session on the ICDAR2019 Robust Reading Challenges (RRC). During this special session on RRC, the organizers and winners of different challenges were invited to share their experience of participating in the RRC competition, providing a space for debate about Robust Reading methods, datasets, and future challenges.

The technical program of CBDAR 2019 also included two invited talks. The first talk was on the topic of “Irregular Text Detection and Recognition” by Professor Xiang Bai (Huazhong University of Science and Technology, China) and the second talk was on the topic of “Beyond Text Detection and Recognition: Emerging Opportunities in Scene

The proceedings of CBDAR 2019 are available with the proceedings of the main ICDAR 2019 conference and the presentation slides of keynotes, oral presentations and special session on RRC competition are available on the CBDAR 2019 website. A photo timeline of the CBDAR 2019 is available on the twitter handle of CBDAR workshop. The reader of this report is invited to follow the twitter handle of CBDAR workshop (@cbdar\_workshop) to stay informed about the future editions of CBDAR.

We would like to take this opportunity to thank again all the PC members of CBDAR 2019 for their meticulous reviewing efforts and also for their participation in the selection of the best paper award!

# Meeting Reports

Conferences, Workshops & Summer/Winter Schools



## General Chairs:

[Michel Couprie](#) (LIGM, ESIEE Paris, France)

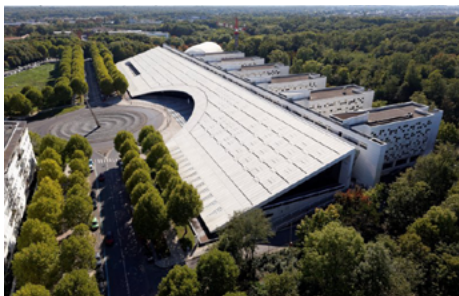
[Jean Cousty](#) (LIGM, ESIEE Paris, France)

[Yukiko Kenmochi](#) (LIGM, CNRS, France)

[Nabil Mustafa](#) (LIGM, ESIEE Paris, France)

by the General Chairs

The 21th International Conference on Discrete Geometry for Computer Imagery, DGCI 2019, was held at [ESIEE Paris](#), France, following the 20th edition held in Vienna in 2017. We would like to highlight that this was the second time that a DGCI conference was held at ESIEE Paris: the 8th edition was already organized at the same place precisely 20 years earlier, in 1999.



The DGCI conference is the main event of the IAPR's [Technical Committee 18 "Discrete Geometry and Mathematical Morphology"](#). The aim of the DGCI conference is to bring together researchers, students and practitioners of discrete

geometry, including discrete topology, geometric models, and mathematical morphology, to present and discuss new advances in these fields, be they purely theoretical developments or novel applications. This DGCI edition gained, as usual, the technical sponsorship of the IAPR, as well as the financial sponsorships of Springer, of our institutions—namely, ESIEE Paris, Université Paris-Est, Université Paris-Est Marne-la-Vallée, Laboratoire d'Informatique Gaspard-Monge, Centre National de la Recherche Scientifique (CNRS) and Bézout Labex—and of Agence National de la Recherche (ANR).

This DGCI conference attracted 50 submissions by authors from 20 countries: Australia, Austria, Belgium, Brazil, China, France, Hungary, India, Iran, Italy, Japan, The Netherlands, Peru, Poland, Russia, Serbia, Spain, Sweden, UK, and USA. Out of these 50 submissions, 38 were selected for presentation at the conference after a review-and-

rebuttal process. The proceedings were published by Springer in the Lecture Notes in Computer Science book series ([LNCS, volume 11414](#)).

During the conference, participants (92 in total from 17 countries: Austria, Belgium, Brazil, Cyprus, France, Hungary, India, Italy, Japan, Russia, Serbia, Spain, Sweden, Swiss, Czech Republic, UK and USA) actively experienced a rich program of presentations, punctuated by ample breaks for discussion. Thanks to the IAPR, we could provide financial support dedicated in particular to student participants. The scientific program consisted in three keynote lectures, 28 oral and 10 poster presentations. The presented works were of very high quality, and the Springer best student paper prize was awarded to:

- "Efficient Algorithms to Test Digital Convexity" by Loïc Crombez, Guilherme D. da Fonseca and Yan Gérard (Université Clermont Auvergne - LIMOS, France).



The success of DGCI 2019 can also be attributed to the three great keynote lectures. We are very grateful to the keynote speakers:

- [Alexandre Xavier Falcão](#) (University of Campinas, Brazil) gave a lecture on “The Role of Optimum Connectivity in Image Segmentation: Can the Algorithm Learn Object Information During the Process?”
- [Longin Jan Latecki](#) (Temple University, USA) gave a lecture on “Computing Maximum Weight Cliques with Local Search on Large Graphs with Application to Common Object Discovery”
- János Pach (Alfréd Rényi Institute of Mathematics, Hungary; formerly École Polytechnique Fédérale de Lausanne, Switzerland) gave a lecture on “The Blessing of Low Dimensionality”

Together with the main DGCI 2019 event, a one-day pre-conference workshop on [Discrete Topology and Mathematical Morphology in honor of the retirement of Gilles Bertrand](#) and a half-day post-conference workshop on [Approximation Algorithms: Combinatorics, Geometry and Statistics](#) were also organized, leading to a rich one-week program. Through the program and social events (two cocktails and the banquet), we hope that participants enjoyed many conversations and discussions.

Now, we are working on a special issue of the event that will be published in the Journal of Mathematical Imaging and Vision (JMIV). Ten papers have been selected and their authors have been invited to submit an extended version. We expect a very valuable and insightful special issue on our research topics.

We would like to thank all contributors, the keynote speakers, the Program and Steering Committees of DGCI, the Organizing Committee of DGCI 2019, and all those who made this conference happen. Last, but not least, we thank all participants and we hope that everyone had great interest in DGCI 2019.

The next DGCI is planned in the summer of 2020, organized jointly with the International Symposium on Mathematical Morphology (ISMM). Both steering committees are actively working on this exciting first joint event.

See you in 2020!

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





## Organizers:

- Local Chairs:** **Dr. Clovis Tauber**, UMR U1253 iBrain, Université de Tours, Inserm, France, and **Dr. Nicolas Ragot**, LIFAT EA6300, Université de Tours, France
- General Chair:** **Prof. Sergio A Velastin**, Cortexica Vision Systems Ltd. UK, Vision and Imaging Network, IET, UK, and Queen Mary University of London, UK
- ACHiRP Chair:** **Dr. Héctor Allende-Cid**, Pontificia Universidad Católica de Valparaíso, Chile
- Tutorials Chair:** **Dr. Marcelo Mendoza**, Pontificia Universidad Católica de Valparaíso, Chile

### 10th International Conference on Pattern Recognition Systems (ISPRS2019)

The ICPRS is an annual event of the Chilean Association for Pattern Recognition (ACHiRP). In 2019 it was organised by the University of Tours (France) and AChiRP, endorsed by the IAPR and sponsored by the Vision and Imaging Professional Network of the Institution of Engineering and Technology (IET) who have published its proceedings.

Papers deemed to be of the required standard and presented at the conference, are indexed by INSPEC and, through it, normally by IEEE Xplore and Scopus (provided that at least one author registered and presented the work at the conference). All papers were submitted via Conftool to be peer-reviewed by an international panel of experts. Excellent papers will be encouraged to submit extended versions for consideration in an IET JCR peer-reviewed journal (e.g. IET Computer Vision Journal, IET Image Processing Journal or IET Biometrics Journal).

ICPRS 2019 aimed to create

an important networking forum in which participants could discuss the present and future of pattern recognition systems. Its predecessors—ICPRS-18, ICPRS-17, ICPRS-16, the Chilean Conference on Pattern Recognition (CCPR, 2014) and the Chilean Workshop on Pattern Recognition (CWPR, 2009-2013)—provided 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.

ICPRS 2019 Proceedings  
were published by

**IET** Digital Library

[https://digital-library.theiet.org/  
content/conferences/cp761](https://digital-library.theiet.org/content/conferences/cp761)

### General Statistics

ICPRS received 37 contributions

from 13 countries (Iraq, Egypt, UK, Chile, France, Brazil, Germany, PRC (China), Algeria, USA, Saudi Arabia, Peru, Benin). After a rigorous blind reviewing process, where each paper was reviewed by at least three experts, a total of 20 papers were accepted. All the accepted papers have scientific quality above the overall mean rating.

### Keynotes

*Keynote 1: "From Objects to Actions"*, Prof. Sergio A Velastin, Senior Research Scientist, Cortexica Vision Systems Ltd., UK.

Computer vision research has been making steady progress for the last 20 years or so. In the last few years it has made much faster advances thanks to improved hardware, an explosion in the amount of visual data available and the application of deep neural networks. An area that is still a challenge is the automatic description of human actions from video, otherwise known as human action recognition or human action detection. This talk presented some ideas on how to address this problem.

**Keynote 2:** "Similarity search for weakly supervised Machine Learning", Dr. Matthijs Douze, Facebook AI Research (FAIR).

The growth of datasets in terms of size and number of classes blurs the lines between classification and instance search tasks.

K-nn classification has several drawbacks that prevent it from being competitive in a classical supervised setting. However, it has advantages in a "not really" supervised setting, i.e. where there are tags rather than classes, or multi-media annotations (freeform text, face ids, GPS coordinates, URLs etc.). It also generalizes smoothly to on-line training and situations where there is no clear separation between a training and a test set. We will present a few computer vision works where similarity search is applied to unsupervised and weakly supervised learning in computer vision.

**Keynote 3:** "Face recognition: from traditional to learning-based methods", Dr. Giuliano Grossi, Assistant Professor, University of Milan (UNIMI),

Starting in the seventies, face recognition has become one of the most researched topics in computer vision and biometrics. Traditional methods and machine learning techniques have, over recent years, been superseded by a deep learning approach based on convolutional neural networks (CNNs) as well as sparse dictionary learning modeled within the sparse representation paradigm. The deep neural networks methods rely heavily on the size and representativeness of training set and suffer or even fail with few samples per person. Instead, learning a sparse dictionary from small training sets (or at the very limit one sample per subject) turns out to be a robust

method guaranteeing appreciable performance also against poor availability of information per subject. The purpose of this talk is to describe how effectively learning techniques have improved the global approach to the identity recognition problem, addressing relevant issues in this area such as data collection, open challenges, and several promising directions for future research.

### Awards



*Best Paper laureates along with the organizing committee*

The best five reviewed papers were then carefully considered by an international panel of five experts who decided to award a joint ICPRS-19 Best Paper Award to authors Sarahi Rosas Gonzalez, Ilyess Zemmoura, Clovis Tauber (Université de Tours, France) and Cecilia Ostertag, Marie Beurton-Aimar, Thierry Urruty (Université de La Rochelle, France) for the papers entitled "Deep Convolutional Neural Network to predict 1p19q co-deletion" and "IDH1 mutation status from MRI in Low Grade Gliomas and 3D-SiameseNet to Analyze Brain MRI", respectively.

### Organization

The conference was organized by Prof. Clovis Tauber from the Université de Tours, France, (Local Chair), together with Prof. Nicolas Ragot from Université de Tours, France, (Local Chair), Prof. Sergio A Velastin from Cortexica Vision Systems Ltd. and Queen Mary University of London UK, (General Chair), Dr. Héctor Allende-Cid from



*Organizing committee and invited speakers*

Pontificia Universidad Católica de Valparaíso, Chile (ACHIRP chair), and Dr. Marcelo Mendoza, Universidad Técnica Federico Santa María, Chile (Tutorials Chair).

The Local Organization was co-ordinated by Université de Tours, France. 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 visit to the Olivier Debré Contemporary Art Centre on 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.



*Organizers and Student team in front of the conference building (University of Tours)*



CIARP 2019

## 24th Iberoamerican Congress on Pattern Recognition

October 28-31, 2019, Havana, Cuba

<https://ciarp.uci.cu>

### General Chairs:

Ingela Nyström, Uppsala University, Sweden  
Yanio Hernandez, Universidad de las Ciencias Informáticas, Cuba  
Heydi Mendez-Vazquez, CENATAV, Cuba  
Milton García-Borroto, CUJAE, Cuba

### Program Chairs:

Jose Ruiz Shulcloper Universidad de las Ciencias Informáticas, Cuba  
José Eladio Medina Pagola Universidad de las Ciencias Informáticas, Cuba  
Vladimir Milián Núñez Universidad de las Ciencias Informáticas, Cuba



by Alberto Del Bimbo, University of Firenze, Italy

CIARP 2019 was held in the historical and magnificent Hotel Nacional, in Havana, Cuba, under the organization of the Cuban Association for Pattern Recognition and Universidad de las Ciencias Informáticas.

CIARP 2019 was endorsed by the International Association for Pattern Recognition (IAPR), the Cuban Association for Pattern

Recognition (ACRP), the Cuban Society for Mathematics and Computer Sciences (SCMC), the Mexican Association for Computer Vision, Neurocomputing and Robotics (MACVNR), the Argentine Society for Pattern Recognition (SARP-SADIO), the Chilean Association for Pattern Recognition (AChiRP), the Special Interest Group on Pattern Recognition of the Brazilian Computer Society (SIGPRSBC), the Uruguayan Association for Pattern Recognition (AURP), the Spanish Association

for Pattern Recognition and Image Analysis (AERFAI) and the Portuguese Association for Pattern Recognition (APRP).

CAIRP 2019 received 130 contributions from 23 countries. The review process was conducted according to the IAPR standard. After the review process, 72 papers were accepted for oral/poster presentation, from 31 different countries (47% rejection rate). Three papers were withdrawn from the proceedings.

The CIARP 2019 program included Tutorials, Keynote speeches and oral/poster scientific presentations.

The four half-day tutorials were given respectively by:

- Prof. P. Perner (Institute of Computer Vision and applied Computer Sciences, Germany) "Case-Based Reasoning for Images and Signals"
- Prof. M. Tistarelli (Università degli Studi di Sassari, Italy) "Face Recognition"
- Prof. A. Del Bimbo (University of Firenze, Italy) "Learning with memory"
- Prof. I. Nystrom (Uppsala University, Sweden) "Interactive Segmentation and Visualization of Medical Images – from theory to practice"

The Keynote speeches were given respectively by:

- Prof. M. Tistarelli, "Biometrics in Forensic Science"
- Prof. A. Del Bimbo, "Incremental learning of people identities"
- Prof. J.-F. Bonastre (Université d'Avignon, France) "Learning neural network-based speech representations for voice characterization and speaker recognition"
- Prof. P. Perner, "Case-Based Reasoning for Images and Signals or How to learn incrementally a model for image and signal processing?"

All presentations were given by the authors. An extended version of the 25 best papers will be published in:

- a Special Issue in the Intelligent Data Analysis journal (10

papers, Guest Editors: A. Fazel Famili and J. E. Medina Pagolan)

- a Special Issue in the Pattern Analysis and Applications journal (15 papers, Guest Editor J. R. Shulcloper).

Two awards were given:

- the CIARP-IAPR Best Paper Award (committee: M. Tistarelli, A. Del Bimbo, P. Perner, I. Nystrom, T. Tan)



was presented to Camilo Vasquez for the paper entitled, "Convolutional Neural Networks and a Transfer Learning Strategy to Classify Parkinson's Disease from Speech in Three Different Languages".

- the Aurora Pons-Porrata Medal (committee: R. Cucchiara, R. González-Díaz, I. Talavera-Bustamante) was given to Dr. Leila Maria García Fonseca from the Brazil's National Institute for Space Research (INPE) for her leading role throughout her career as a researcher in imaging, pattern recognition and remote sensing.



The awarded papers will be published in a Special Section of Pattern Recognition Letters journal.

Accompanying Events of CIARP'2019 were:

- The Welcome Cocktail on October 28 evening, on the edge of the swimming pool in Hotel Nacional
- The Cultural Program on Oct 30 evening, in Hall 1930 of Hotel Nacional
- The Conference Dinner on Oct 31 evening, in the garden restaurant of Hotel Nacional
- The invited speakers were guest of a special private dinner offered in a restaurant in Havana.

The Conference was held in a warm and friendly atmosphere. The location was superb. The organization was excellent under any respect. The scientific quality of the Conference was good. All the scientific sessions were participated and well received by the attendees. Interaction between the speakers and the audience was intense during the conference and continued at the events.



Click on the image above to go the publisher's web site for the CIARP 2019 Proceedings.

25<sup>th</sup> Iberoamerican Congress on Pattern Recognition

# CIARP 2020

23 - 26 November 2020  
Porto, Portugal  
[www.ciarp2020.org](http://www.ciarp2020.org)




# BOOKSBOOKSBOOKS



Below is a list of recently or soon-to-be published titles by Springer and CRC Press.

Also, please let us know if you have a new book coming out, and we'll list it here.

Happy reading!

~[Jing Dong](#), IAPR Newsletter EiC



## New titles published by Springer:

*The following recently-published Springer titles may be of interest to the IAPR members:*

- \* **Selfie Biometrics** by Ajita Rattani et al. (Eds.): <https://www.springer.com/book/9783030269715>
- \* **Deep Learning and Convolutional Neural Networks for Medical Imaging and Clinical Informatics** Le Lu et al. (Eds.): <https://www.springer.com/book/9783030139681>
- \* **Video Verification in the Fake News Era** by Vasileios Mezaris et al. (Eds.): <https://www.springer.com/book/9783030267513>
- \* **Human Activity Recognition and Behaviour Analysis** by Liming Chen and Chris D. Nugent: <https://www.springer.com/gb/book/9783030194079>
- \* **Image Texture Analysis** by Chih-Cheng Hung, Enmin Song and Yihua Lan: <https://www.springer.com/book/9783030137724>
- \* **Fundamentals of Image Data Mining** by Dengsheng Zhang: <https://www.springer.com/book/9783030179885>
- \* **Domain Adaptation for Visual Understanding** by Richa Singh et al. (Eds.): <https://www.springer.com/book/9783030306700>
- \* **Handbook of Vascular Biometrics** by Andreas Uhl et al. (Eds.): <https://www.springer.com/book/9783030277307> [Open Access]
- \* **Guide to Deep Learning Basics** by Sandro Skansi (Ed): <https://www.springer.com/book/9783030375904>



## New titles published by CRC Press:

*Books to be published summer 2020:*

- \* **Smart CMOS Image Sensors and Applications** by Jun Ohta: <https://www.crcpress.com/Smart-CMOS-Image-Sensors-and-Applications/Ohta/p/book/9781498764643>
- \* **Unmanned Aerial Remote Sensing: UAS for Environmental Applications** by David R. Green: <https://www.crcpress.com/Unmanned-Aerial-Remote-Sensing-UAS-for-Environmental-Applications/Green/p/book/9781482246070>
- \* **Deep Learning for Remote Sensing Images with Open Source Software** by Rémi Cresson: <https://www.crcpress.com/Deep-Learning-for-Remote-Sensing-Images-with-Open-Source-Software/Cresson/p/book/9780367858483>
- \* **Fuzzy Machine Learning Algorithms for Remote Sensing Image Classification** by Anil Kumar, A. Senthil Kumar, Priyadarshi Upadhyay: <https://www.crcpress.com/Fuzzy-Machine-Learning-Algorithms-for-Remote-Sensing-Image-Classification/Kumar-Kumar-Upadhyay/p/book/9780367355715>





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

The nomination deadline for the  
2020 [J. K. Aggarwal Prize](#)  
to be presented at ICPR 2020 (Jan. 2021) in  
Milan, Italy  
has been extended to  
September 11, 2020



International Association for Pattern Recognition

*J. K. Aggarwal Prize*

presented to

*Your nominee*

For contributions to ...

January 11, 2021

Αποστολή Αντιπροέδρου, IAPR President



**ICVSS 2020**

*Sicily ~ 12 - 18 July*

**International Computer Vision Summer School**

Application deadline extended to May 10, 2020.

Apply [here](#).

# 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.

+ Plus sign denotes pending application for IAPR endorsement/sponsorship + \* Asterisks denote non-IAPR events \*

All dates indicated below are as of the time of publication. Conference dates and venues may change due to COVID-19 concerns. Some may be held online. Please check the conference websites for the most up-to-date information.

	Meeting	Report on previous edition	Venue
2020	<a href="#">SSB 2020</a> : 17th Intl. Summer School for Advanced Studies on Biometrics for Secure Authenticatio: FORENSICS AND IDENTITY SCIENCE FOR HUMAN-CENTERED APPLICATIONS'	<a href="#">SSB 2019</a>	<b>Virtual</b> (was Italy)
	<a href="#">MCPR 2020</a> : 12th Mexican Conference on Pattern Recognition	<a href="#">MCPR 2019</a>	Mexico
	<a href="#">ISPR 2020</a> : First Intl. Conf. on Intelligent Systems and Pattern Recognition		Tunisia
	<a href="#">DeLTA 2020</a> : 1st Intl. Conference on Deep Learning Theory and Applications		France
	<a href="#">DAS 2020</a> : 14th IAPR Intl. Workshop on Document Analysis Systems	<a href="#">DAS 2018</a>	<b>Virtual</b> (was China)
	<a href="#">ISAIR 2020</a> : 5th International Symposium on Artificial Intelligence and Robotics	<a href="#">ISAIR 2019</a>	Japan
	<a href="#">ANNPR 2020</a> : 9th Workshop on Artificial Neural Networks in Pattern Recognition	<a href="#">ANNPR 2018</a>	Switzerland
	<a href="#">ICFHR 2020</a> : 17th Intl. Conference on Frontiers of Handwriting Recognition	<a href="#">ICFHR 2018</a>	Germany
	* <a href="#">IJCB 2020</a> : 4th International Joint Conference on Biometrics (IJCB is a triennial conference) *	<a href="#">IJCB 2017</a>	USA
	<a href="#">CVIP 2020</a> : 5th Intl Conference on Computer Vision and Image Processing	<a href="#">CVIP 2019</a>	India
	<a href="#">DGMM 2020</a> : 1st Intl. Conf. on Discrete Geometry and Mathematical Morphology		Sweden
	<a href="#">MedPRAI 2020</a> : 4th Mediterranean Conference on Pattern Recognition and Artificial Intelligence	<a href="#">MedPRAI 2018</a>	Tunisia
2021	<a href="#">ICPR 2020</a> : 25th International Conference on Pattern Recognition	<a href="#">ICPR 2018</a>	Italy
	<a href="#">ICPR 2020 Workshops</a> : Workshops that have been provisionally accepted as part of the ICPR 2020 program	<a href="#">ICPR 2018</a>	Italy
	<a href="#">S+SSPR 2020</a> : IAPR Joint International Workshops on Statistical Techniques in Pattern Recognition (SPR) and Structural and Syntactic Pattern Recognition (SSPR)	<a href="#">S+SSPR 2018</a>	Italy



Thoughts on articles you've read in this issue of the IAPR Newsletter?  
 Ideas for features you'd like to see in the IAPR Newsletter?  
 Send your comments to: Jing Dong, Editor-in-Chief, [jdong@nlpr.ia.ac.cn](mailto:jdong@nlpr.ia.ac.cn)

The IAPR Newsletter is published in association with the IAPR website, [www.iapr.org](http://www.iapr.org).  
 The IAPR Newsletter is published four times per year, January, April, July, and October.

Deadline for the next issue:  
 December 9, 2019



To contact us:

Editor-in-Chief

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

Layout Editor

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



<https://www.linkedin.com/groups/8159047>

