



Newsletter



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Reflections on Pattern Recognition in Developing Countries

by José Ruiz Shulcloper

President of the Cuban Association of Pattern Recognition



First of all, I want to congratulate Heydi Méndez-Vázquez for the idea of promoting this series on Developing Countries with the theme of **collaboration**. Academic and professional exchange is crucial for our countries, as has been validated in the last sessions of the G77 and China, in the UN plenary session, and in many other government-level meetings that have taken place in recent days.

But the fundamental issue, I think, is how and when we are going to accomplish that collaboration. In my opinion, this collaboration should not be governed by the mechanisms of buying and selling, because it is not about making money to increase one's personal standard of living. It is about achieving collaboration at the national level in each of our countries. Specialists must think more about the development of our countries and not limit ourselves to improving the standard of personal and family life. **We must include in our family the entire population of our countries and the rest of humanity**, because that will be how we will achieve the development and stability required for all to live in better conditions.

As we focus on the development of Pattern Recognition in each of our countries, the first step is to **apply our knowledge to the problems** of each of the areas of development such as medicine, industry, agriculture and

Continued on page 2...

Editor's note: Prof. Dr. José Ruiz Shulcloper is the founder of the Cuban Association of Pattern Recognition and is currently its President. He has contributed to the creation of other Latin American associations and has worked hard on the organization of Iberoamerican Conferences. He received the IAPR Fellow Award in 2012 "For contributions to pattern recognition and data mining, and services to the IAPR."

~ Heydi Méndez-Vázquez, IAPR Newsletter EiC

Calls For Papers



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

Conferences, Dates, & Locations

2024

Calls and Deadlines

in order from earliest paper deadline
(other deadlines vary in order)

[ROBOVIS 2024](#)
Feb. 25-27, 2024
Rome, Italy

4th International Conference
on Robotics, Computer Vision
and Intelligent Systems

Papers: Closed
Position Papers: Nov 15, 2023
Spec. Sess. Proposals: Closed
Abst. Track & Doctoral Cons: Dec 21, 2023
Tutorials, Demo, or Panel Prop: Jan 12, 2024

[ICPRAM 2024](#)
Feb 24-26, 2024
Rome, Italy

13th International Conference
on Pattern Recognition
Applications and Methods

Papers: Closed
Position Papers: Nov 17, 2023
Spec. Sess. Proposals: Closed
Abst. Track & Doctoral Cons: Jan 1, 2024
Tutorials, Demo, or Panel Prop: Jan 12, 2024

[VISAPP 2024](#)
Feb 27-29, 2024
Rome, Italy

19th International Conference on
Computer Vision Theory
and Applications

Papers: Closed
Position Papers: Nov 17, 2023
Spec. Sess. Proposals: Closed
Abst. Track & Doctoral Cons: Jan 1, 2024
Tutorials, Demo, or Panel Prop: Jan 12, 2024

[ICPRAI 2024](#)
Jun 18-21, 2024
Jeju Island, South Korea

4th International Conference
on Pattern Recognition and
Artificial Intelligence

Papers: Dec 15, 2023

[ICDAR 2024](#)
Aug 30 - Sep 4, 2024
Athens, Greece

18th International Conference
on Document Analysis
and Recognition

Papers: Feb 1, 2024
Journal-Track Papers: Nov 14, 2023
Competition Proposals: Nov 20, 2023
Workshop Proposals: Nov 25, 2023
Tutorial Proposals: Nov 30, 2023

[ISPR 2024](#)
June 12-14, 2024
Istanbul, Turkey

4th International Conference
on Intelligent Systems
and Pattern Recognition

Papers: Mar 15, 2024

[ICPR 2024](#)
Dec 1-5, 2024
Kolkata, India

27th International Conference
on Pattern Recognition

Papers: Mar 20, 2024
Tutorial Proposals: Jun 15, 2024

From the Editor's Desk (...continued from page 1)

all other areas that affect the welfare of the population. To achieve this, I suggest a survey of the problems in each of these areas, following the Methodology of Mathematical Modeling of Pattern Recognition Problems. Using this instrument ensures three fundamental goals are achieved: 1) **to create new tools** for the solution of applied problems, 2) **to improve existing tools** with new versions as the complexity of the problems increases and 3) **to create new areas of research in Pattern Recognition**. In doing so, we transcend existing levels of applied research, as we inevitably discover ways in which our knowledge is insufficient to address unfamiliar problems.

With regard to when we should do this, it is **as soon as possible**. A new urgent vision of the development of humanity is required, and that is what we are working on. Each of us has the skill and motivation to assume a little piece of this very large task. Success to all!

~ José Ruiz Shulcloper

CALLS FROM IAPR COMMITTEES

From the IAPR Education Committee:

[Call for Applications for IAPR Research Scholarships](#)

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. Applications may be submitted at any time before the visit starts.

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.

Click [here](#) to learn more or contact: IAPR Secretariat, c/o Linda O’Gorman, secretariat@iapr.org

From the IAPR Industrial Liaison Committee:

[Call for Students Seeking Internship Opportunities](#) [and for Companies with Internships Available to contribute to the Internship Listings on the IAPR Internship Brokerage Page](#)

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 do this through a web-based internship listing service. Companies can list their internship opportunities; students can browse the listings and contact the company.

For Students

If you are seeking an internship, please click on the underlined call title above (or [here](#)) to find an updated list of 44 companies –from Adobe to Zhongan Technology– offering internships, locations (some remote), requirements, etc.

NOTE: As of April 17, 2023, there were 44 opportunities listed and 20,171 accesses (since November 2017).

For Companies with Internships Available

Click on call title (link) above for examples. Please email your listings as follows:

- To: webmaster@iapr.org
Subject: IAPR internships, listing
1. Details:
 2. Host:
 3. Location:
 4. Post Type:
 5. Specialty:
 6. Funded:
 7. Length:
 8. Degree & Visa Requirements:
 9. Internship start date:
 10. Application closing date:
 11. Details:
 12. Contact:

From the IAPR

Executive Committee (ExCo):

[Call for Proposals for Summer/Winter Schools](#)

Summer/winter schools are training activities that expose participants to the latest trends and techniques in the particular pattern recognition field. 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.

[Deadline Schedule](#)

<i>For School Dates In...</i>	<i>Proposal Deadline is...</i>
Aug, Sept, Oct, or Nov	June 1
Dec, Jan, Feb, or Mar	October 1
Apr, May, Jun, or July	February 1

How to Submit: Proposals for IAPR-supported summer schools should be submitted by email, *at least four months in advance of the start of the school*, to IAPR Secretariat Linda O’Gorman (secretariat@iapr.org). A PDF attachment containing all the required information is appreciated.

For detailed guidelines, see the Proposal Requirements described in the [ExCo Initiative on Summer Schools](#).

CALL FOR PAPERS

General Chairs

Umapada Pal, India
Josep Kittler, UK
Anil Jain, USA

Program Chairs

Rama Chellappa, USA
Apostolos Antonacopoulos, UK
Cheng-Lin Liu, China
Subhasis Chaudhuri, India

Workshop Chairs

Edwin Hancock, UK
P. Shivakumara, Malaysia
Stephanie Schuckers, USA
Jean-Marc Ogier, France

Tutorial Chairs

B. B. Chaudhuri, India
Guoying Zhao, Finland
Michael R. Jenkin, Canada

Competition Chairs

Richard Zanibbi, USA
Lianwen Jin, China
Laurence Likforman, France

Doctoral Consortium Chairs

Daniel Lopresti, USA
Véronique Eglin, France
Mayank Vatsa, India

Publicity Chairs

Dipti Prasad Mukherjee, India
Bob Fisher, UK
Xiaojun Wu, China

Publications Chairs

Wataru Ohyama, Japan
Ananda S. Chaudhury, India

Awards Committee Chair

Arpan Pal, India

International Liaison / Visa Chairs

Palash Ghosal, India
Yue Lu, China, China

Finance Chairs

Kaushik Roy, India
Michael Blumenstein, Australia

Organizing Chairs

Saumik Bhattacharya, India
Sk Md Obaidullah, India

The International Conference on Pattern Recognition (ICPR) is the flagship conference of the International Association of Pattern Recognition (IAPR) and the premier conference in pattern recognition, covering computer vision, image, speech and video processing, machine intelligence, and other related areas. It is a 5-day event that comprises the main conference, Workshops, Tutorials, different Competitions, Doctoral Consortium etc. ICPR-2024 is the 27th event of the series and it provides a great opportunity to nurture new ideas and collaborations for students, academics and industry researchers.

MAIN TOPICS OF INTEREST

ICPR-2024 has 6 tracks as follows:

- ▶ Artificial Intelligence, Machine Learning for Pattern Analysis
- ▶ Computer and Robot Vision
- ▶ Image, Speech, Signal and Video Processing
- ▶ Biometrics and Human Computer Interaction
- ▶ Document Analysis and Recognition
- ▶ Biomedical Imaging and Bioinformatics

IMPORTANT DATES

- ▶ First Call for Papers: August 2022
- ▶ Second Call for Papers: August 2023
- ▶ Paper submission open: Jan 20, 2024
- ▶ Paper submission deadline: March 20, 2024
- ▶ Acceptance/rejection/revision decision: June 20, 2024
- ▶ Revision/rebuttal submission deadline: July 10, 2024
- ▶ Final acceptance notification: August 5, 2024
- ▶ Camera-ready submission: August 31, 2024
- ▶ Conference: December 1-5, 2024

SUBMISSION AND REVIEW

ICPR-2024 will follow a single-blind review process. Authors can include their names and affiliations in the manuscript.

PAPER FORMAT AND LENGTH

Springer LNCS format with maximum 15 pages (including references) during paper submission. To take care of reviewers' comments, one more page is allowed (without any charge) during revised/camera ready submission. Moreover, authors may purchase up to 2 extra pages. Extra page charges must be paid at the time of registration.

Contact: For any enquiry please contact the ICPR-2024 Secretariat via email at icpr2024@gmail.com and icpr2024@isical.ac.in

Track Chairs

Track 1: Artificial Intelligence, Machine Learning for Pattern Analysis

Larry O'Gorman, USA
Dacheng Tao, Australia
Petia Radeva, Spain
Sushmita Mitra, India
Jiliang Tang, USA

Track 2: Computer and Robot Vision

C. V. Jawahar, India
João Paulo Papa, Brazil
Maja Pantic, UK
Gang Hua, USA
Junwei Han, China

Track 3: Image, Speech, Signal and Video processing

P. K. Biswas, India
Shang-Hong Lai, Taiwan
Hugo Jair Escalante, Mexico
Sergio Escalera, Spain

Track 4 : Biometrics and Human Computer Interaction

Massimo Tistarelli, Italy
Richa Singh, India
Vishal Patel, USA
Wei-Shi Zheng, China

Track 5: Document Analysis and Recognition

Xiang Bai, China
David Doermann, USA
Josep Lladós, Spain
Mita Nasipuri, India

Track 6: Biomedical Imaging and Bioinformatics

Jayanta Mukhopadhyaya, India
Xiaoyi Jiang, Germany
Seong-Whan Lee, Korea

Women in ICPR Chairs

Ingela Nyström, Sweden
Alexandra B. Albu, Canada
Jing Dong, China
Sarbani Palit, India

Sponsorship Chairs

P. J. Narayanan, India
Yasushi Yagi, Japan
Venu Govindaraju, USA
Alberto Del Bimbo, Italy

ORGANIZING / TECHNICAL PARTNERS

iapr.org/icpr2024

icpr2024@gmail.com / icpr2024@isical.ac.in



OPEN CALL FOR PRIZE NOMINATIONS



KING-SUN FU PRIZE
J. K. AGGARWAL PRIZE
MARIA PETROU PRIZE

OPEN CALL FOR
IAPR FELLOW
NOMINATIONS ON [PAGE 6](#)



From the IAPR King-Sun Fu, J. K. Aggarwal, and Maria Petrou Prize Committees

Open Calls for Nominations for Three Prestigious Prizes to be presented at the

27th International Conference on Pattern Recognition
ICPR 2024 ~ Kolkata, India ~ December 1-5, 2024



KING-SUN FU PRIZE

The IAPR's highest honor, this Prize is given to honor the memory of Professor King-Sun Fu, who was instrumental in the founding of IAPR, served as its first president, and is widely recognized for his extensive contributions to the field of pattern recognition. The Prize is given to a living person in recognition of an outstanding technical contribution to the field of Pattern Recognition.

photo: ethw.org/King-Sun_Fu



J.K. AGGARWAL PRIZE

This Prize is given in honor of Professor J. K. Aggarwal, widely recognized for his extensive contributions to the field of pattern recognition and for his participation in IAPR's activities. The Prize is given to a young scientist, under the age of 40 at the date of the final deadline for nominations, 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.

photo: en.wikipedia.org/wiki/J._K._Aggarwal



MARIA PETROU PRIZE

This Prize honors the memory of Professor Maria Petrou, a scientist and engineer of the first rank, particularly in her role as a pioneer and role model for women researchers. Widely recognized for her extensive contributions to the fields of image processing and pattern recognition, she also made significant contributions to the growth of IAPR. The Prize is awarded to a living woman scientist/engineer who has made substantial contributions to the field of Pattern Recognition (or a closely related field), and whose past contributions, current research activity, and future potential may be regarded as a model.

photo: iapr.org/members/newsletter/Newsletter13-01/index_files/Page652.htm

CLICK ON PORTRAITS FOR FULL CfNs, RULES AND NOMINATION FORMS
Nomination letters accompanied by the nominee's CV are requested by December 1, 2023.

Prize recipients are expected to present an invited talk at ICPR 2024 and to provide a contribution to the special issue of *Pattern Recognition Letters*, which will include extended versions of all papers that received an IAPR award at ICPR 2024.

Prize recipients shall be selected by the respective Prize Committees, subject to approval by the IAPR Governing Board, and based upon nomination criteria set out in the full CfNs on the IAPR website. Members of the IAPR Executive Committee and respective Prize Committees are ineligible for these Prizes and may not serve as nominators or endorsers.

Nomination and endorsement forms (linked via portraits above) may be submitted on a preliminary basis to the IAPR Secretariat and modified until the final submission deadline set by each Prize Committee. Only complete applications will be considered for the 2024 Prizes.

Contact information: IAPR Secretariat, c/o Linda O'Gorman, secretariat@iapr.org



for the 2024 IAPR Fellow Awards ~ Deadline: March 31, 2024

We welcome nominations for the award of FIAPR

Anyone is eligible to be nominated except current members of the Executive Committee and of the Fellow Committee.

Full 2024 Nomination Instructions can be found [here](#).

To initiate a nomination, a nominator must complete and submit an [IAPR Fellow Nomination Form](#).

Any member of an IAPR Member Society can serve as a nominator, except for nominees themselves and current members of the Executive Committee and Fellow Committee.

Each nomination must be endorsed by at least one recommendation letter (submitted [Endorsement Form](#)), either from a member of an IAPR Member Society (different from the nominator) or from an IAPR Fellow.

All Nomination and Endorsement forms must be submitted electronically via webpages (linked left) and will be acknowledged by an email. Submission problems should be reported to the IAPR Webmaster, cc'ing the Fellow Committee Chair, Prof. Umapada Pal, Indian Statistical Institute, Kolkata, India. The following email link will autofill correct addresses and subject heading:

To: webmaster@iapr.org

Subject: Submission Problem, IAPR Fellowship 2024

CC: umapada@isical.ac.in; umapada_pal@yahoo.com

Click for a list of members of the

[IAPR Fellow Committee](#)

IAPR appreciates your efforts to support our fellowship program!



GREAT NEWS!

OUR NEW WEBSITE LAUNCHED ON JULY 25, 2023!

The updated presentation incorporates suggestions from a 2022 survey of the IAPR community, including:

- » improved compliance with web accessibility standards
- » mobile friendly adaptive layout
- » contemporary structure, comparable to existing scientific community websites

Plus, our improved content management system means more efficient maintenance, search engine optimization, and information organization, including database updates for members, fellows, and committee appointments.

The IAPR website continues to grow and improve over time...

Contact the IAPR Webmaster (webmaster@iapr.org) for more information or to offer additional suggestions.

**CLICK
HERE
TO VISIT NOW!**



EQUALITY, DIVERSITY & INCLUSION



Note from your EiC, LE, and EDI Committee Chair: This feature of the IAPR Newsletter is devoted to advertising activities and news from the IAPR standing committee on Equity, Diversity and Inclusion (EDI). The statement of IAPR Policy on EDI can be found [here](#). Our goal in this regular feature is to call attention to EDI initiatives that may be of interest to our readers.

Maria De Marsico, Chair of EDI, invites all readers to share information about any related initiatives in their countries or national organizations. Information can be sent to demarsico@di.uniroma1.it. Please use the subject line: "Relevant Information for IAPR EDI Committee"

Dear Readers of the
IAPR Newsletter,

As the most attentive will know, the IAPR Fellow Committee has issued an Open Call for Fellow Nominations (read more [here](#)).

This letter asks you to participate in a discussion of some important issues related to IAPR Fellow Awards:

- improving the diversity of the pool of nominees, and
- improving the rubric used to evaluate nominees

A problem that has been raised for a long time is the gender imbalance among IAPR Fellows. In addition, it is also possible to notice a clear region imbalance. These issues are evident from the [list of Fellows](#) published on the IAPR website. According to the direct experience of some EDI Committee members, some chapters hardly even consider sending any nominations. The following testimony strongly suggests that it is necessary to devise means to encourage and support less-represented communities:

"...at times we consider our contributions not at par with those members that have more representation and opportunities to be part of main IAPR events. This imbalance of contribution is not due to dedication or talent, but at times, we don't have enough funding to attend conferences or have visa issues, due to which we are selective in our submissions to IAPR events. Therefore, our contributions become limited due to unfortunate circumstances."

Well-known community members often act as nominees on the basis of personal knowledge gained at IAPR and other scientific events, which is not possible when a promising researcher cannot attend the main community events. (The EDI Committee will delve into this in a future column in the *Newsletter*.)

After nominations, the next problem is to devise a fair rubric for ranking the candidates. Some ideas under consideration are:

- create separate rankings for different genders and then merge the two lists to choose the best candidates in both lists. A similar strategy could also be used for geographical regions, of course, still assuring the quality of the final choices.

- create a rubric with some numerical weighting of a set of criteria, including scientific impact¹, gender identity, geographical location, years of service to the IAPR, etc.

The rationale is that it is much harder for researchers in some underrepresented groups to achieve the same recognition as their peers in other groups.

The EDI Committee needs and looks forward to receiving suggestions, proposals, and comments. For a more fruitful discussion, we prepared a brief questionnaire that can be found [here](#).

Every constructive comment or contribution is more than welcome.

~ Maria DeMarsico

¹ J. Ravenscroft, M. Liakata, A. Clare, & D. Duma, "Measuring scientific impact beyond academia: An assessment of existing impact metrics and proposed improvements," *PloS one*, 12(3), 2017. e0173152.



FROM THE EXCO...

IAPR: THE FIRST 50 YEARS

by Daniel Lopresti, IAPR Past President



News from the IAPR Executive Committee

The ExCo's interim meeting was held in Barcelona, September 15-16. In two days of intensive meetings, we discussed future conferences (ICPR2024, ICPR2026), the activities of the Technical and Standing Committees, the future of IAPR as an international association central to AI, support for member societies, opportunities for young people, and Summer Schools... among many other important topics.

The IAPR Governing Board approved new members of three ICPR prize committees (J K Aggarwal, King Sun Fu and Maria Petrou Prize Committees). The ExCo acknowledges with gratitude the commitment of the new members as well as members who have served in the past term.

The IAPR Governing Board approved a new wording of the Bylaws, Section 3, "Procedures for Enrollment of Members," paragraph 3.6. The new wording regulates the provision by the member societies of membership lists.

The ExCo has established two new awards for Technical Committees: the **Outstanding TC Award** and the **Rising Star TC Award**, with winners to be announced for the first time at ICPR2024. The criteria for both awards are: excellence and impact of organized events, educational activities, and member/leader development and governance.

The 27th International Conference on Pattern Recognition (ICPR 2024) will be held in Kolkata, India between 01-05 December 2024. The paper submission deadline is approaching (March 20, 2024). We encourage the IAPR community to submit contributions.

Bids to host ICPR 2028. The Call for bids to host ICPR 2028 will open in the coming months. Potential candidates can find the guidelines at <https://iapr.org/conferences/proposals.php>

IAPR endorsed Conferences. Many Conferences and Workshops under the umbrella of the IAPR will be held next year around the world. Visit the "Upcoming Conferences" section in the IAPR web (<http://iapr.org/>) site for further details about dates, deadlines, and places.



Almost exactly 50 years ago,

the First International Joint Conference on Pattern Recognition was held at the Mayflower Hotel in Washington, DC. We mark this key date as an early milestone in the founding of IAPR, which we will be celebrating over the next few years. That first conference attracted over 300 attendees from 14 different countries, and we have grown substantially into today's uniquely international IAPR with nearly 50 member societies from around the world, along with our important biennial ICPR conference, which regularly attracts thousands of researchers.

We are excited to introduce a special new logo (above) to mark our 50th Anniversary. This wonderful design was produced by Carolyn Buckley, our new IAPR Newsletter Layout Editor. Looking ahead, the IAPR Ad Hoc 50th Anniversary Committee is discussing a range of activities to engage the international research community in celebration. Some will take place at upcoming ICPR conferences in 2024, 2026, and 2028, while others will make use of this newsletter and our website as ways of communicating and preserving important aspects of our history.

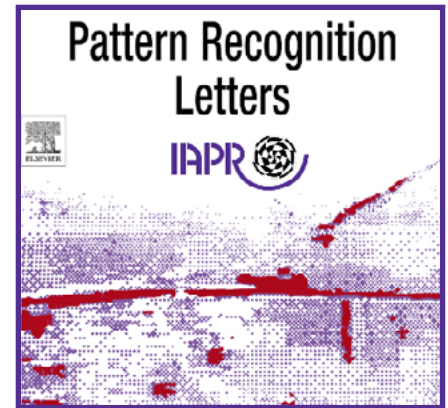
We need your help! If you have ideas, memories, or photos to share connected to IAPR, please let us know by sending an email to 50th@iapr.org. We are eager to collect materials we can digitize to not only preserve the history of IAPR, but to acknowledge the contributions of the many individuals who helped to make IAPR what it is today. **We can only accomplish this through community participation.** We will cover costs associated with shipping and returning historic materials to their owners, and will gratefully acknowledge all contributions on the IAPR website.

Watch this space for information about upcoming celebrations, and be sure to check out our history pages and click on "50th Anniversary Timeline" on our website (iapr.org/aboutus).

~ Daniel Lopresti

UPCOMING SPECIAL ISSUE

PATTERN RECOGNITION LETTERS



Multiscale Pattern Recognition for Multifractal Data (VSI: MSPR)

GUEST EDITORS



Hana Rabbouch
University of Sousse,
Tunisia



Carlo Cattani
Università della Tuscia,
Viterbo, Italy

This special issue aims to emphasize the importance of Multiscale Pattern Recognition in analyzing complex systems across various scales, with a specific focus on multifractal phenomena and diverse applications in business and econophysics. We invite researchers from various fields to contribute to this interdisciplinary discussion.

Submission Period

Jan 1, 2024 through Jan 20, 2024

For more details and manuscript submission information, click:
[PRL Special Issue Call for Papers](#)
(scroll down to MSPR)

PATTERN RECOGNITION LETTERS ~ CALL FOR SPECIAL ISSUES

We invite researchers in Pattern Recognition and related fields to submit proposals for new Special Issues. Special Issues are a unique occasion to collect high-quality papers that pertain to topics not strictly related to the journal, and therefore to expand the scientific offer for our readers.

Special Issue proposals are submitted about one year in advance with respect to the requested submission slot (i.e., the period in which paper submissions for the Special Issue will be uploaded). We divide the year into four quarters, starting in January. One year in advance of the paper submission period for a Special Issue, we collect proposals for Special Issue topics (in Jan., Apr., July, or Oct.), make the decision (in Feb., May, Aug., or Nov.), and notify the prospective Guest Editors (GEs) (in Mar., June, Sept., or Dec.). In this way, our decision can be made by comparing all proposals for the same quarter.

Selection criteria include the following:

1. The VSI must be well-focused on a current, relevant topic of interest for the international scientific community, particularly for researchers in Pattern Recognition. Too-wide topics such as “Deep Networks for Image Understanding” or “Advances in Pattern Recognition for Image Understanding” will not be considered.
2. The candidate GEs’ scientific production must testify sufficient experience in the proposed topics in order to better evaluate the overall quality of both papers and reviews.
3. Proposals with multiple GEs with a wide geographic distribution of GEs will be preferred as this promotes a wider submission population.
4. GEs must underline in their CVs their engagement with PRL, as either authors or reviewers; proposals from such GEs will be preferred.
5. Rotation of GEs is preferred, in groups or individually.

For candidate GEs’ convenience, a proposal template with all requested information is available. Please contact Prof. Maria De Marsico (demarsico@di.uniroma1.it), the EiC for PRL Special Issues.

IAPR



THE NEXT GENERATION

In this feature, we invite young researchers to tell us...



= how they became involved in pattern recognition research
= their technical background, current and future research interests
= how IAPR can help young researchers

Enterprise image credit: tab62 - stock.adobe.com

Editor's note: Orlando received one of the Best Paper Awards given at the International Workshop on Artificial Intelligence and Pattern Recognition (IWAIPR 2023), held Sept. 27-29 in Cuba.

~ Heydi Méndez-Vázquez, EiC

Orlando Grabiél Toledano-López

Orlando Grabiél Toledano-López received his Bachelor of Engineering in Informatics Science from the University of Informatics Sciences (UCI in Cuba) in 2015. He received in 2018 the academic degree of Master in Advanced Computer Science, in the master's program of the UCI. He is currently pursuing his PhD in Computer Science at the same institution. His main research interest is in the applications of metaheuristic algorithms in neural network training, natural language processing, and large-scale optimization of neural language models.

How did you get involved in pattern recognition research?

I have always liked mathematics and natural sciences; however, computer science aroused in me a deep curiosity. My university studies were in computer science; in the last year of my degree, I learned some fundamentals of machine learning and problem solving methods. However, in my master's degree, I deepened my understanding of computer vision, statistical methods, regression and classification problems, and maximum likelihood estimators. Furthermore, I got into the field of distributed processing and MapReduce paradigm.

I was fortunate, in my early professional career, to become a member of the Artificial Intelligence and Pattern Recognition research group at UCI, where I participated in scientific sessions and learned about the research being carried out by others. As part of this group, I benefited from the experience

and knowledge of Professor Dr. [José Ruiz Shulcloper](#), who is a guide and source of inspiration for young pattern recognition researchers at UCI.

Another factor was the VLIR-UOS doctoral program, where I have had the opportunity to receive courses from prestigious professors in the field, both from Flemish and Cuban universities.

Finally, the isolation stage of COVID-19 was a time of deep study, experimentation, trial and error. During this period, I studied natural language processing, deep learning and metaheuristic algorithms in problem solving.

What technical work have you done and what are your current and future research interests?

Since entering the PhD program in Informatics at UCI, I have been working on methods for training deep neural networks based on Estimation of Distribution Algorithms (EDA), under the supervision of Dr. Julio Madera (University of

Camaguey), Dr. Hector González (UCI) and Dr. Alfredo Simon-Cuevas (Technological University of Havana, CUJAE). We developed and applied a method of neural architectural training based on transformers that allows text classification and



opinion-mining in problems related to Convolutional Neural Networks and Large Neural Language Models.

The developed method solves problems that characterize first-order gradient descent methods, such as premature convergence to local minima, which in many cases affects the generalizability of the models. We split the training process into two stages. First, we apply gradient-based methods for learning the network weights involved in the feature extraction. In a second stage, we perform the weights optimization of the block of dense layers involved in the final classification using EDA. As result, the method improves the convergence speed, decreases the generalization error and avoids the local minima. We conducted statistical evaluations on public benchmark datasets for text categorization.

One area of strategic application for opinion analysis in Cuba is the tourism sector. We have developed a deep neural network classifier for online travel reviews. Researchers in the area of opinion classification will have a new tool that will allow them to analyze data and make decisions more effectively. We propose a new database specialized in the

context of the Cuban tourism that includes hotels, hostels and rental houses. This element provides value for further contributions in the area of the analysis of semantic aspects of the opinions, opinion mining and sentiment analysis.

Our method based on EDA was also applied to fine-tuning a Transformer model for polarity and place detection on online tourist reviews. We used the AdamW method as an optimizer in the first stage of the training process and the Covariance Matrix Adaptation Evolution Strategy for dense layer blocks optimization. We designed a custom Transformer-based architecture with softmax classifier on top, using the pre-trained encoders mT5 and RoBERTa. We tested the method on a database collected by the Rest-Mex 2022 Event, referring to Mexican tourism. With this approach, the combination of pre-trained models, different preprocessing strategies, and data augmentation achieves competitive results compared to other state-of-the-art methods.

How can IAPR help young researchers?

I think that young researchers have the opportunity to reinforce their knowledge, learn new things, and exchange ideas with prominent researchers in the field.

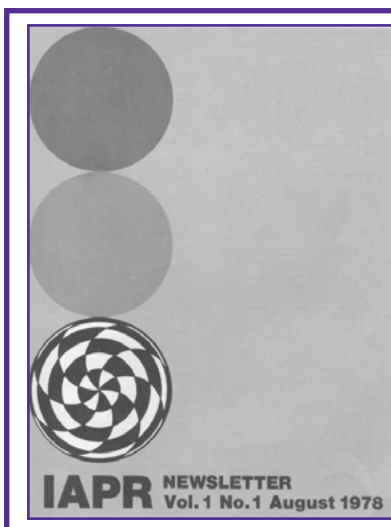
IAPR can nurture young scientist with the latest tools, techniques and methods to do high-impact science.

Young researchers need to be able to participate in prestigious international events in the area, such as conferences, workshops and congresses, with opportunities to learn about current events and the state of the art first-hand from the authors of the contributions.

We need opportunities to communicate the new ideas we are working on, and to have more experienced researchers offer critical evaluation of our work. In short, IAPR is well-positioned to promote innovation and open access to science and knowledge for all.

Perhaps IAPR could help organize open courses on different areas of knowledge within artificial intelligence and pattern recognition, emphasizing mathematical modeling, numerical methods, statistics in research and data analysis. They could also open spaces for participation in competitions that pose existing challenges in underdeveloped areas. Young researchers need to be able to test new approaches and methods that are being developed and to compare with others.

~ Orlando Grabiél Toledano-López



THEN AND NOW
The cover of the first issue of the IAPR Newsletter, August, 1978 (left) and the most recent cover (right), with the new 50th Anniversary Logo (below).



IN MEMORIAM PROFESSOR DR. ROUMEN KOUNTCHEV

A tribute by Mariofanna Milanova

With deep sadness, I must convey the somber news of the passing of Professor Roumen Kountchev, the esteemed President of the Bulgarian Association of Pattern Recognition (BAPR), who left us on April 09, 2023. He was an exceptional leader within our community. Beyond his role as a Professor at the Faculty of Telecommunications, Department of Radio Communications and Video Technologies at the Technical University of Sofia, Bulgaria, Dr. Kountchev was a supreme ambassador and advocate for Digital Signal Processing research. He was one of the founding pillars of Digital Processing Research in Bulgaria.

His extensive field of scientific interest encompassed digital signal and image processing, image compression, multimedia watermarking, video communications, pattern recognition, and neural networks. Professor Kountchev leaves behind a substantial legacy, comprising 343 published papers in both national and international journals, 15 authored books, 46 book chapters, and 20 patents (including 3 international). Additionally, he served as the principal investigator for 38 research projects (6 of which were international in scope).

Dr. Kountchev was also a proud member of the Euro Mediterranean Academy of Arts and Sciences (EMAAS) and held editorial board positions at numerous prestigious journals, including the International Journal of Reasoning-based Intelligent Systems, International Journal of Broad Research in Artificial Intelligence and Neuroscience, KES Focus Group on Intelligent Decision Technologies, Egyptian Computer Science Journal, International Journal of Bio-Medical Informatics and e-Health, and International Journal of Intelligent Decision Technologies.

Throughout his illustrious career, he was invited to deliver plenary speeches at various notable events, such as the WSEAS International Conference on Signal Processing (Istanbul, 2009), the WSEAS International Conference on Signal Processing, Robotics, and Automation (University of Cambridge, 2010), the WSEAS International Conference on Signal Processing, Computational Geometry, and Artificial Vision (Istanbul, 2012), the International Workshop on Bioinformatics, Medical Informatics, and e-Health (Cairo, 2013), the Workshop SCCIBOV (Sidi Bel Abbes, Algeria, 2015), the International Conference on Information Technology (Al Zayatoonah University in Amman, Jordan, 2015 & 2017), the WSEAS European Conference of Computer Science (Rome, Italy, 2016), the 9th International Conference on Circuits, Systems, and Signals (London, UK, 2017), the 8th International Congress of Information and Communication Technology (Xiamen, China, 2018), the 5th International Conference on Wireless Communications and



Applications (Hainan, China, 2021) and the 1st International Conference on Smart & Sustainable Technologies (University Gunupur, India, 2021).

Dr. Kountchev's presence was an encouragement of inspiration, and in his company, one knew they stood beside an exceptional scientist. He carried himself with unwavering dignity and charisma, yet his warmth and approachability endeared him to all who had the privilege of knowing him.

Around the globe, Dr. Kountchev was cherished by countless friends. Dr. Mironov fondly

remembers his tenure as the head of the Department of Radio Communications and Video Technologies, where he exhibited remarkable intelligence, vitality, and unwavering dedication for over 50 years.

I consider it a profound honor to have had the privilege of knowing Professor Kountchev. He was a mentor, a friend, and a consummate professional colleague, with whom I shared decades of collaboration. He always worked toward the betterment of the Association, providing guidance to me and many of his successors. He graciously welcomed me into his home on numerous occasions, and during conversations about future grants, the Association, and our shared aspirations for a brighter tomorrow, I came to cherish our bond. A photograph taken of us during one such visit remains a cherished memento on my phone, always bringing a smile to my face.

The organizing committees of four conferences have installed "Best Paper Awards" in memory of Prof. Roumen Kountchev:

- 1) The International Conference on Artificial Intelligence and Communication Technology ([ICAICT2023](#))
- 2) The 2nd World Conference on Intelligent and 3D Technologies ([WCI3DT 2023](#))
- 3) International Conference on Computational Vision and Robotics, HongKong ([ICCV2024](#))
- 4) The 5th International Conference on 3D Imaging Technologies - Multidimensional Signal Processing and Deep Learning ([3DIT-MSP&DL2023](#))

Today, we mourn the loss of an exceptional man, a role model, and a beloved friend to all. Dr. Kountchev's legacy will continue to inspire and guide us as we navigate the path ahead.

I invite you to share memories and stories of Professor Koutchev, commenting on Association posts found on the BAPR Facebook and LinkedIn channels, or contact his wife and collaborator [Dr. Roumiana Kountcheva](#), or me, [Prof. Mariofanna Milanova](#).

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IAPR TC2 STRUCTURAL & SYNTACTICAL PATTERN RECOGNITION

[Twitter](#)

iapr.org/tc2

Chair: Andrea Torsello (Ca' Foscari University of Venice Italy)
Vice Chairs: Bai Xiao (Beihang University, Beijing, China)
 Luca Rossi (Hong Kong Polytechnic University, Hong Kong)

The aim of the [TC2](#) is to promote interaction and collaboration among researchers working on Structural and Syntactical Pattern Recognition (SSPR). Since 1996, the IAPR TC1 and TC2 jointly organise the biennial conference [S+SSPR](#). The event is traditionally colocated with the International Conference on Pattern Recognition (ICPR), attracting participants working in a wide variety of fields that make use of statistical, structural or syntactical pattern recognition techniques.

The TC2 organized a PhD Summer School on “Deep Learning on Graphs” that was held at The Hong Kong Polytechnic University (Hong Kong) on the 31st of August, 2023. The event was free of charge and saw a full day of talks from an international team of speakers delivering six seminars to nine local and seven non-local students, selected out of a total of 25 applicants, evenly split between MSc and PhD levels.

Prof. Andrea Torsello (below, left), kickstarted the event with a seminar covering the history of graph (deep) learning, highlighting the challenging issues faced by researchers in this area. **Prof. Xiao Bai** (second from left) showed how graph neural networks can be applied to the processing of 3D computer vision data. **Dr. Luca Rossi** (middle) drew the students’ attention to the importance of creating AI models whose predictions are interpretable and explainable. Finally, **Prof. Edwin Hancock** (second from right) talked about the exciting opportunities at the intersection of quantum machine learning and graph analysis. The event also included two PyTorch coding sessions delivered by **Dr. Luca Cosmo** (below, right), where the students had an opportunity to put the concepts they had just learned into practice.



Andrea Torsello

Ca' Foscari University
of Venice, Italy



Xiao Bai

Beihang University,
Beijing, China



Luca Rossi

Hong Kong Polytechnic
University, Hong Kong



Edwin Hancock

University of York,
United Kingdom



Luca Cosmo

Ca' Foscari University
of Venice, Italy



IAPR

TECHNICAL COMMITTEE NEWS, CONTINUED

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IAPR TC2 STRUCTURAL & SYNTACTICAL PATTERN RECOGNITION

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iapr.org/tc2

TC2 NEWS, CONTINUED

The event was free for the attendees and financially sponsored by the PolyU Department of Electrical and Electronic Engineering. The Summer School was the first of a series of similar events that TC2 plans to organize in alternate years with the Joint IAPR International Workshops on Statistical Techniques in Pattern Recognition and Structural and Syntactic Pattern Recognition (S+SSPR), a biennial event now in its 20th iteration. S+SSPR is organized by TC1 and TC2, the first- and second-oldest technical committees of the IAPR, respectively.



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IAPR TC4
BIOMETRICS

iapr.org/tc4

Chair: Julian Fierrez (Universidad Autónoma de Madrid, Spain)
Vice Chair: Shiqi Yu (Southern University of Science and Technology, China)

With an increasing demand on enhanced security and more reliable personal authentication, biometrics has become a very active research topic in pattern recognition and is set to remain so for many years to come. IAPR TC4 is the leading force in the international biometrics community. Our [website](#) serves as the information hub on biometrics-related conferences or workshops, publications, standardization, databases, evaluations, research groups, and other biometrics news.

IEEE International Joint Conference on Biometrics (IJCB 2023)

25–28 September 2023, Ljubljana, Slovenia

The International Joint Conference on Biometrics (IJCB), the premier international forum for research in biometrics and related technologies, combines two major biometrics conferences: the IEEE Biometrics Theory, Applications, and Systems (BTAS) and the International Conference on Biometrics (ICB). IJCB is made possible through a special agreement between the IAPR TC4 and the IEEE Biometrics Council.

[IJCB-23](#) (the 7th iteration) was held in Ljubljana, Slovenia, September 25-28, 2023. IJCB-23 was financially sponsored by the IEEE Biometrics Council and technically co-sponsored by IAPR. It was also financially supported by NSF, Amazon, VISA and Rank One Computing.

Details regarding submissions and acceptance rates will be included in a full report in the January 2024 issue of the *IAPR Newsletter*.

The 2023 IAPR Young Biometrics Investigator Award (YBIA) was given to Prof. Xiangyu Zhu from the Institute of Automation, Chinese Academy of Sciences. This highly competitive award recognizes an individual under the age of 40 who has made substantial contributions to the IAPR Biometrics community and whose research has had a major impact in biometrics. Prof. Zhu was honored for “contributions to face biometrics: methodology, system, datasets.”

The 2023 IAPR Best Biometrics Student Paper Award (BBSPA) was presented to Ashwin Prakash, Thejaswin S, Athira Nambiar, and Alexandre Bernardino for their paper titled *Adapt-FuseNet: Context-aware*

Multimodal Adaptive Fusion of Face and Gait Features Using Attention Techniques for Human Identification.

Keynote speeches were given by **Dr. Gouying Zhao** (University of Oulu, Finland); **Dr. Manoj Aggarwal** (Amazon One); the YBIA winner, **Dr. Xiangyu Zhu**; and the 2023 IEEE Biometrics Council Meritorious Service Award winner, **Dr. Mayank Vatsa** (IIT Jodhpur, Rajasthan, India). Three Tutorials and a Doctoral Consortium also enriched the event. Among several social activities were trips to the Postojna Cave and the medieval Castle of Ljubljana.

Read more about IJCB 2023 in the Meeting Reports section of the January IAPR Newsletter!

20th International Summer School for Advanced Studies on Biometrics for Secure Authentication

**20 YEARS OF BIOMETRICS:
Reflections and Outlooks**



See [page 32](#) for a detailed report on the 20th International Summer School on Biometrics.

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IAPR TC6 COMPUTATIONAL FORENSICS

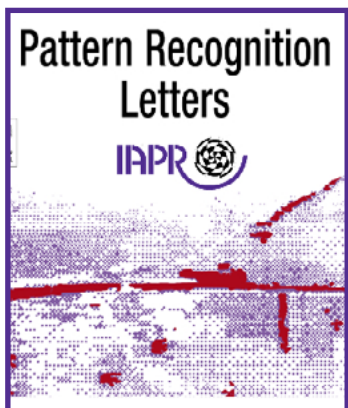
iapr.org/tc6

Chair: Victor Sanchez (University of Warwick, UK)
Vice Chair: Nicolas Sidère (University of La Rochelle, France)

IAPR TC6 aims to further promote research, development, and education in Computational Forensics (CF) and to provide a platform for cooperation and exchange of information among researchers, practitioners, and teachers from the various disciplines of computational and forensic sciences. CF involves modeling, computer simulation, computer-based analysis, and recognition in studying and solving forensic problems.

Special issue of
Pattern Recognition Letters

A [special issue](#), “Advances in Disinformation Detection and Media Forensics (A2DMF),” led by Dr Irene Amerini and Prof Victor Sanchez, is well underway with the first set of reviews having been sent to the authors.



Invited Talks

Dr Irene Amerini gave a seminar at the Department of Computer Science of the University of Warwick, UK, on June 21st, 2023 on *Advances in Multimedia Forensics to Counter Misinformation*.

Prof Victor Sanchez was invited to the 2023 Summer School for IT Law and Legal Informatics at Saarland University, Germany, to talk about *Applications of Multimedia Forensics in Criminal Investigations*.

For more information, please visit our [TC6 website](#).



IAPR TC9 PATTERN RECOGNITION IN HUMAN-MACHINE INTERACTION

iapr.org/tc9

Chair: Mariofanna Milanova (University of Little Rock, AR, USA)
Vice Chair: Friedhelm Schwenker (University of Ulm, Germany)

The IAPR Technical Committee-9 (TC9) has been actively engaged in a variety of activities aimed at advancing the field of HCI and fostering collaboration within the IAPR community. In this report, we highlight some of the key activities and initiatives undertaken by TC9 members in recent months.



INDUSTRIAL LIAISON COMMITTEE

Collaboration with IAPR Industrial Liaison Committee

One of the primary objectives of TC9 is to bridge the gap between academia and industry in the field of Human-Machine Interaction. To achieve this, members of TC9 have been actively collaborating with the IAPR Industrial Liaison Committee. This collaboration has facilitated the exchange of ideas, research findings, and best practices between researchers and industry professionals. By working together, we aim to ensure that HMI research remains relevant and applicable to real-world industrial settings.



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IAPR TC9 PATTERN RECOGNITION IN HUMAN-MACHINE INTERACTION iapr.org/tc9 TC9 NEWS, CONTINUED

Organizing Discussions on Starting a Business

In line with the broader goal of promoting HMI research and its practical applications, TC9 has been organizing discussions and workshops related to starting and managing a business. These discussions draw from SCORE's The Startup Roadmap: Your Guide to Successfully Starting a Business and provide valuable insights to researchers interested in entrepreneurship.



Delivering free NVIDIA Deep Learning Workshops, Online Classes and Tutorials

TC9 offers and delivers FREE organized by NVIDIA Deep Learning workshops, online classes and tutorials. The participants after accomplishing the tasks are going to receive the NVIDIA Certificate. For more information check nvidia.com/en-us/training/online/, or contact mgmilanova@ualr.edu

Conference Organization and Proceedings

TC9 representative Friedhelm Schwenker co-edited the Proceedings of the first PanAfriCon AI conference and supported the second PanAfriCon AI 2023 October 5-6, 2023 Addis Ababa (Ethiopia).

Presenting Talks on Generative AI

IAPR TC9 recognizes the growing importance of generative AI in shaping the future of human-computer interaction. Committee members have been actively presenting talks and webinars on various aspects of generative AI, including its applications, challenges, and ethical considerations. These presentations serve as a valuable resource for researchers, students, and practitioners seeking to stay updated on cutting-edge technology trends. One example is Mariofanna Milanova's invited talks: Pyramidal Decomposition Used in Generative Artificial Intelligence Models at the 4th International Workshop on New Approaches for Multidimensional Signal Processing (NAMSP 2023) and Human Augmentation: Robust and Trusted Human-Machine Interaction presented at FDP on Recent Trends in Electronics, Signal Processing & Networks (RTESPN 2023).



IAPR Technical Committee-9 on Human-Computer Interaction is committed to advancing research and collaboration within the field. Through collaborative efforts with the Industrial Liaison Committee, mentorship of Ph.D. students, discussions on entrepreneurship, presentations on generative AI, and the development of a blog, TC9 members are actively contributing to the growth and development of HMI. We look forward to further strengthening these initiatives and exploring new opportunities to drive innovation in the field of Human-Machine Interaction.



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TC 12

IAPR TC 12 MULTIMEDIA AND VISUAL INFORMATION SYSTEMS

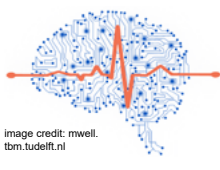
[Twitter](#) [LinkedIn](#) iapr.org/tc12

Chair: Hugo Jair Escalante (INAOE & CINVESTAV, Mexico)
Vice Chair: Sergio Esclara (University of Barcelona, Spain)
Vice Chair: Henning Müller (HES-SO, Sierre, Switzerland)
Information Officer: Albert Ali Salah (Utrecht University, Utrecht, Netherlands)

[IAPR TC12](#) promotes interaction among researchers working in modeling, design, and development of systems for the analysis, processing, description, and retrieval of multimedia and visual information as well as the applications of these systems in challenging domains.



[ImageCLEF 2023](#) results are out! The 21st edition of ImageCLEF included tasks involving medical imaging, image search diversification, prediction of visual interestingness, and potential real-life effects awareness of online image sharing.
[Challenge Summary Paper](#) [CLEF Working Notes and Proceedings](#)



The [International Workshop on Affective Computing for Mental Wellbeing](#) (mWell) was organized during ACII, in Boston, September 2023, and brought together researchers in Affective Computing (AC), clinicians in the emerging area of digital mental health and digital psychiatry, developers from industry, and policymakers to discuss which aspects of digital mental health apps and tools can most benefit from new AC technologies and existing technologies already incorporating AC.

[The NeurIPS 2023 - Machine Unlearning Challenge](#) (New Orleans, USA, December 2023) is offering a total of \$50,000 in prize money. Machine unlearning is an emergent subfield of machine learning that aims to remove the influence of a specific subset of training examples — the “forget set” — from a trained model, while maintaining accuracy on the rest of the train set and generalization to held-out examples. This competition considers a realistic scenario in which an age predictor has been trained on face images. After training, a certain subset of the training images must be forgotten to protect the privacy or rights of the individuals concerned.

The [4th Workshop on Real-World Surveillance](#) (WACV 2024, Waikoloa, USA, January 3-7, 2024) is soliciting papers reporting experimental results on any application of computer vision in real-world surveillance, challenges they have faced, and their mitigation strategy on topics like object detection, tracking, anomaly detection, and multimodal surveillance, as well as legal and ethical issues in this setting. It also includes the [2nd Challenge on Pedestrian Attribute Recognition and Attribute-based Person Retrieval](#).

The 18th IEEE International Conference on Automatic Face and Gesture Recognition

27-31 May 2024 SDKM, ITU Campus, Istanbul, Turkey

[18th IEEE Conference on Automatic Face and Gesture Recognition \(FG 2024\)](#) will take place in Istanbul (Turkey) May 27-31, 2024. FG is the premier international forum for research in image and video-based face, gesture, and body movement recognition. The conference also features a competition program. The call is open for submitting proposals for the organization of academic challenges in the scope of FG2024. Both data science and live competitions will be considered for the program. Information on the Call for Competitions can be found [here](#).

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IAPR TC20 PATTERN RECOGNITION FOR BIOINFORMATICS AND DIGITAL HEALTH

[LinkedIn](#) iapr.org/tc20

Chair: Bert Amrich (Hasso Plattner Institute and University of Potsdam, Germany)

Vice Chair: Arzucan Özgür (Boğaziçi University, Turkey)

Communication Officer: İnci M. Baytaş (Boğaziçi University, Turkey)

The [TC20](#) aims to pursue cutting-edge developments in pattern recognition for health, and to encourage interdisciplinary collaborations at the intersection of pattern recognition and bioinformatics, biomedical informatics, and digital health analytics. The activities organized by TC20 will enable a two-way knowledge transfer between pattern recognition and health domains.

PRHA 2023

The 2nd International Workshop on Pattern Recognition in Healthcare Analytics

In conjunction with the 15th Asian Conference on Machine Learning

T20 is excited to remind readers that The 2nd International Workshop on Pattern Recognition in Healthcare Analytics ([PRHA 2023](#)) will be held on November 11, 2023, in Istanbul, Turkey. The TC 20 organizes PRHA 2023 in conjunction with the 15th Asian Conference on Machine Learning.

A vast amount of digital health data has become accessible to clinical and machine learning researchers. Thus, healthcare has become a prominent field that benefits from data-driven techniques. In parallel, machine learning for healthcare has emerged to develop models to assist physicians and clinical researchers in solving complex healthcare tasks and clinical decision-making. Machine learning and deep learning-based approaches have been successfully applied to various healthcare tasks, such as risk prediction and diagnosis prediction. However, digital patient data retains multiple challenges. For instance, high-dimensional, non-linear, temporal, distributed, and sensitive patient data pose additional requirements while designing machine learning models. The 2nd PRHA workshop aims to showcase the emerging challenges in bioinformatics and digital health with their latest solutions in machine learning and provide an outlet for interdisciplinary collaborations.

The workshop's scope entails, but is not limited to:

Bioinformatics

Patient Phenotyping and Subtyping

Patient Monitoring & Machine Learning in Pervasive Healthcare

Multi-modal Learning for Disease Prediction and Treatment Effects

Temporal Modeling for Disease Progression

Interpretable Models for Clinical Decision Support

Privacy-preserving Techniques for Distributed and Sensitive Patient Data

MEETING REPORTS

CONFERENCES, WORKSHOPS, & SUMMER/WINTER SCHOOLS

DGMM

Strasbourg 2022

International IAPR Conference on
**DISCRETE GEOMETRY
AND
MATHEMATICAL MORPHOLOGY**
October, 24th to 27th

General Chairs

[Étienne Baudrier](#), [Adrien Krahenbuhl](#), [Étienne Le Quentrec](#), [Benoît Naegel](#), [Mohamed Tajine](#)
(all ICube, University of Strasbourg, France)

Digital Geometry and Mathematical Morphology 2022 ([DGMM 2022](#)), held October 24-27 in an on-site mode in Strasbourg, France, was the second IAPR joined event of the two main conference series of [IAPR TC18](#), namely, the International Conference on Discrete Geometry for Computer Imagery ([DGCI](#)) and the International Symposium on Mathematical Morphology ([ISMM](#)). It followed the first successful edition, DGMM 2021, in Uppsala, Sweden, and was organized by the IMAGEs team of the laboratory ICube (University of Strasbourg, CNRS).

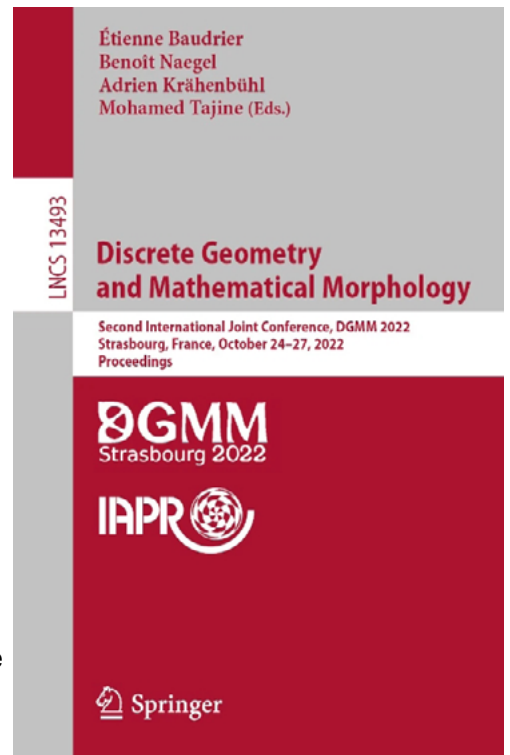


The DGMM event series is a major forum for researchers, students, and practitioners working in all the fields of discrete geometry and mathematical morphology and their applications to image processing and image analysis, to share and discuss the latest studies, results and ideas in these areas. This DGMM edition gained the sponsorship of IAPR as well as the financial sponsorships of our institutions, namely, Université de Strasbourg and the interdisciplinary thematic institute, IRMIA++.

There were 41 manuscripts submitted from 11 countries. Thirty-one were accepted after a review-and-rebuttal process, 20 of which were selected for oral presentation. The review process was managed by the Organizing Committee with the help of the Program Committee, including researchers from five continents. The [Proceedings of DGMM 2022](#) includes the contributions as 12-page articles, published by Springer International as part of the book series *Lecture Notes in Computer Science* (LNCS, vol 13493). and are linked to the cover image (right).

The DGMM 2022 program offered four invited talks, seven oral sessions, three poster sessions, and two tutorials. The three poster sessions included one for the 11 selected papers, one open session (also with 11 posters), and one session dedicated to reproducible research with two posters.

The invited talks were 60 minutes long and were given by distinguished fellow scientists who are active in the areas of Digital Geometry, Mathematical Morphology and connected fields: Isabelle Bloch (Sorbonne University, France) presented *Hybrid Artificial Intelligence for Knowledge Representation and Model-based Medical Image Understanding - Towards Explainability* IAPR Invited Speaker Chister Kiselman (Uppsala University, Sweden) talked on *Digital Geometry, Mathematical Morphology, and Discrete Optimization: A Survey*, and Nicolas Courty (University Bretagne Sud, France) provided a survey of *Sliced Wasserstein on Manifolds: Spherical and Hyperbolical Cases*. A session was also dedicated to the career of Christian Ronse (University of Strasbourg, France), honored speaker, who presented *Reflections on a Scientific Career and Its Possible Legacy*.



The first tutorial was given by Benjamin Perret on the toolbox Higr on Mathematical Morphology and the second one about DGtal was given by David Coeurjolly. They were attended by 45 people.

Accepted papers were presented by the authors in 30-minute oral sessions. Posters were introduced in a fast-track session and preliminary works (including refused papers) were given the opportunity to show their work in the open session.

Social events included a welcome reception in the Museum of Modern Art, a guided boat tour in the old town of Strasbourg and a conference dinner in the Maison Kammerzell, one of the oldest restaurants of Strasbourg.

During this dinner, the Best Student Paper Prize was delivered to Josselin Lefèvre for his work *Join, Select, and Insert: Efficient Out-of-core Algorithms for Hierarchical Segmentation Trees* [Editor's note: Josselin's work was highlighted in the *Next Generation* feature of the [IAPR Newsletter, April 2023](#)]. The jury also gave a special mention to Jui-Ting Lu for the paper *A New Lattice-based Plane-probing Algorithm*.



DGMM 22 was attended by 76 international scientists and students.

We are working on a special issue of the event that will be published in the *Journal of Mathematical Imaging and Vision (JMIV)*. Seven papers have been selected and an extended version for each of them has been submitted and accepted for publication after a review process. 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 DGMM, the Organizing Committee of DGMM 2022, and all those who made this conference happen.

[DGMM 2024](#)
will be held in Florence (Italy)
April 15-18, 2024!

Report Submitted by
the [DGMM 2022 General Chairs](#)



ISPR'2023

The International Conference on Intelligent Systems and Patterns Recognition

11-13 May 2023
TIME 9:00
Hammamet Tunisia



General Conference Chairs

Akram Bennour Larbi Tebessi University, Algeria
Tolga Ensari Arkansas Tech University, USA
Abdel-Badeeh Salem Ain Shams University, Egypt

Program Committee Chairs

Akram Bennour Larbi Tebessi University, Algeria
Ahmad Bouridane Sharjah University, Sharjah, EAU
Lotfi Chaari INP-Toulouse, France

The third International Conference on Intelligent Systems and Pattern Recognition ([ISPR'2022](#)) was organized by "MIRACL" laboratory; Higher Institute of Computer Science and Multimedia, Sfax; Sfax University, Tunisia; and the Artificial Intelligence and Knowledge Engineering Research Labs, Ain Shams University. The event provided an interdisciplinary forum to share recent advancements in different areas of artificial intelligence and pattern recognition. It was endorsed by the International Association of Pattern Recognition (IAPR) and was held in Hammamet, Tunisia, May 11-13, 2023.

We received 129 submissions, and each was reviewed by at least three members of the international program committee. After a thorough and competitive paper review and selection process, 49 papers were accepted for oral presentation; 44 of these were registered and presented during the conference (34.37% of the submitted papers).

Four keynote talks were delivered during the conference:

Pr. Ahmad Bouridane (University of Sharjah: Sharjah, Sharjah, AE) presented *AI: Benefits, Risks and Challenges*.

Dr. Varuna De Silva (Institute for Digital Technologies at Loughborough University, London, UK) presented *Autonomous Learning in Multi Agent Environments: Cooperation, Communication, and Scalability*.

Dr. Lola Burgueño (University of Malaga, Spain) presented *AI-assisted Model-driven Software Engineering: On Our Way to Achieving Intelligent Software Development*.

Prof. Vasco D.B. Bonifácio (Instituto Superior Técnico, Lisbon, Portugal) presented *Teaching Organic Chemistry Using Virtual Reality*.

Biographies of the keynote speakers along with slides of their talks are available on the [conference website](#).



Three IAPR Best Paper Awards were announced and presented at ISPR 2023:

1st IAPR Best Paper Award:

Bird Species Recognition in Soundscapes with Self-supervised Pre-training by Hicham Bellafkir, Markus Vogelbacher, Daniel Schneider, Valeryia Kizik, Markus Mühlhng, and Bernd Freisleben.

2nd IAPR Best Paper Award

IDA: An Imbalanced Data Augmentation for Text Classification by Asma Siagh, Fatima Zohra Laallam, Okba Kazar, Hajer Salem, and Mohammed Elhacene Benglia

3rd IAPR Best Paper Award

Policy Generation from Latent Embeddings for Reinforcement Learning by Corentin Artaud, Varuna De Silva, Rafael Pina, and Xiyu Shi

Extended versions of these papers will be recommended for possible publication in the journal *Pattern Recognition Letters* (Elsevier). All accepted papers of ISPR 2023 will be published with Springer in their series, *Communications in Computer and Information Science*. CCIS is abstracted/indexed in DBLP, Google Scholar, EI-Compendex, Mathematical Reviews, SCImago, Scopus. CCIS volumes are also submitted for inclusion in *ISI Proceedings*.

Moreover, selected authors will be invited to elaborate on their research topic and submit the results for review and potential publication to several internationally indexed journals (click [here](#) for more information).



[ISPR 2024](#) will be held in Istanbul, Turkey, June 12-14, 2024.

Report Submitted by
[Akram Bennour](#)





General Chair

Prof. Sergio A. Velastin *Queen Mary University of London, UK, Universidad Carllos III, Madrid, Spain*

Local Chairs

Prof. Angel Sappa *Computer Vision Center/ESPOL, Spain/Ecuador*

Prof. Boris Vintimilla *ESPOL, Ecuador*

Prof. Monica Karel Huerta *IEEE/Universidad Politécnica Salesiana, Ecuador*

[ICPRS-23](#) continued the tradition of success following its predecessors, and it was a joint effort between the Escuela Superior Politécnica del Litoral (Guayaquil - Ecuador) and the Chilean Association for Pattern Recognition (ACHI RP), a member of the IAPR. The conference was endorsed by the IAPR and co-sponsored by the IEEE Ecuador Chapter and the IEEE Computational Intelligence Society. We were thrilled to witness the collaboration and knowledge sharing between experts from diverse fields like computer science, engineering, mathematics, and machine learning.

ICPRS-23 embraced a hybrid format, combining in-person and virtual sessions in Guayaquil, Ecuador, with a fully virtual last day.

This approach facilitated the participation of individuals from various parts of the world who could not travel to the conference venue. By providing a seamless and inclusive experience, the event successfully fostered global networking, encouraging valuable knowledge exchange among experts from diverse backgrounds.

This hybrid model sets a promising precedent for future ICPRS conferences, ensuring widespread accessibility and impact.



The conference received a total of 80 paper submissions, demonstrating the growing interest in ICPRS. After a rigorous double-blind peer-review process, 47 of these submissions were accepted for presentation, resulting in an acceptance rate of 59%. We are glad to announce that the proceedings of ICPRS-23 are published by the prestigious IEEE and indexed in [IEEE Xplore](#).

ICPRS-23 attracted an enthusiastic and diverse group of participants,

with a total of 53 registered attendees joining the event virtually from around the world. The conference fostered a global exchange of ideas and knowledge, with coauthors representing 22 countries, including Canada, USA, Colombia, Chile, India, Indonesia, Japan, and many more.

ICPRS-23 began with two exciting workshops held in a hybrid format. The first workshop covered preprocessing techniques for clinical images before deep learning

training, followed by a workshop on designing deep learning models for pattern recognition. Both workshops provided valuable insights and practical knowledge to the attendees.

Throughout the three-day event, ICPRS-23 featured ten thematic sessions, each offering in-depth discussions on various aspects of pattern recognition technologies. The sessions were well-received and contributed to the overall success of the conference. WW



Prof. Sebastián Maldonado (University of Chile, Chile) & Prof. Carla Vairetti (Universidad de Los Andes, Chile) *Transformer-based Text Classification for Business Analytics and Public Safety*

We were privileged to have renowned experts in the field deliver keynote addresses, sharing their valuable insights and visions. The keynote speakers included:

Prof. Anil K. Jain (Michigan State University, USA) *Biometric Recognition: Past, Present and Future*

Prof. Vicente Ordóñez R. (Rice University, USA) *Envisioning the Next Generation of Vision and Language Models*

Dr. Enrique Carrera (Universidad de las Fuerzas Armadas - ESPE, Ecuador) *Radar Target Detection Based on Deep Learning Techniques*

Prof. J. Rafael Orozco (Universidad de Antioquia, Colombia) *Speech, Language, and Movement Processing to Model Parkinson's Disease, and*



In session 8, the Doctoral Symposium provided a platform for Ph.D. students to present their research in a scientific environment and receive valuable feedback from peers and experienced faculty. The symposium played an essential role in nurturing young talent and fostering innovation.



The conference committee recognized exceptional contributions and selected the best papers of the conference, as well as the best student paper. Congratulations to the winners!



Best Paper Award

A Zoom into Ecuadorian Politics: Manifesto Text Classification using NLP

Fernanda Barzallo, Maria Emilia Moscoso, Margorie Pérez, Maria Baldeon-Calisto, Danny Navarrete, Daniel Riofrío, Pablo Medina Pérez, Susana K. Lai-Yuen

Runner-up Best Paper

Balanced Pedestrian Attribute Recognition for Improved Attribute-based Person Retrieval

Andreas Specker, Jürgen Beyerer

Runner-up Best Paper

DeepSIT: Deeply Supervised Framework for Image Translation on Breast Cancer Analysis

Maria Baldeon-Calisto, Francisco Rivera-Velastegui, Daniel Riofrío, Ricardo Flores Moyano, Noel Pérez, Diego Benítez

Best Student Paper

Surface sampling for optimal viewpoint generation

Vanessa Staderini, Tobias Glück, Philipp Schneider, Roberto Mecca, Andreas Kugi

Runner-up Best Student Paper

gAlt: Deep Learning Based Evaluation of Injurious Running Biomechanics Using Pose Estimation

Adarsh Iyer

We extend our gratitude to the organizing team for their dedication and hard work in making ICPRS-23 a memorable and fruitful event. The organizing team consisted of esteemed individuals from different institutions, each contributing to the success of the conference.

ICPRS-23 received generous support from various sponsors, including ESPOL, ACHIRP, IAPR, IEEE Ecuador Section, IEEE Computational Intelligence Society, IEEE Computer Society Ecuador Chapter, TELCONET Latam, REDIIA, and Fondo Ponente. We are grateful for their invaluable support.

ICPRS-23 was a remarkable gathering of experts, researchers, and practitioners from around the world, promoting knowledge exchange and collaboration in the field of pattern recognition systems. We are delighted with the success of the conference and look forward to continuing this tradition in the future.

Thank you to all participants, sponsors, and organizers for making ICPRS-23 a resounding success. Until next year!

[ICPRS-24](#) is expected to be held in London (UK) and hosted by the University of Westminster.

Report Submitted by

Cesar A. Astudillo, PhD
Chilean Association for Pattern Recognition, President
ICPRS, Co-Chair



DeLTA 2023

4th International Conference on Deep Learning Theory and Applications

Rome - Italy . 13 - 14 July, 2023

Conference Chairs

Carlo Sansone
University of Naples Federico II, Italy
and
Oleg Gusikhin
Ford Motor Company, United States

Program Chairs

Ana Fred
Instituto de Telecomunicações and University of Lisbon, Portugal
and
Donatello Conte
Université de Tours, France

The 4th International Conference on Deep Learning Theory and Applications ([DeLTA 2023](#)) was held in Rome, Italy, from July 13 to 14, 2023.

The DeLTA conference was sponsored by the Institute for Systems and Technologies of Information, Control and Communication (INSTICC), and endorsed by the International Association for Pattern Recognition (IAPR). DeLTA 2023 was organized in cooperation with several international organizations involved in research related to Machine Learning, Models and Algorithms, Big Data Analytics, Computer Vision Applications and Natural Language Understanding: ACM Special Interest Group on Artificial Intelligence, International Neural Network Society, Società Italiana di Reti Neuroniche, and the European Society for Fuzzy Logic and Technology.

Deep Learning and Big Data Analytics are two major topics of data science, nowadays. Big Data has become important in practice, as many organizations have been collecting massive amounts of data that can contain useful information for business analysis and decisions, impacting existing and future technology. A key benefit of Deep Learning is the ability to process these data and extract high-level complex abstractions as

data representations, making it a valuable tool for Big Data Analytics where raw data is largely unlabeled.

Machine-learning and artificial intelligence are pervasive in most real-world applications scenarios such as computer vision, information retrieval and summarization from structured and unstructured multimodal data sources, natural language understanding and translation, and many other application domains. Deep Learning approaches, leveraging on big

data, are outperforming state-of-the-art more “classical” supervised and unsupervised approaches, directly learning relevant features and data representations without requiring explicit domain knowledge or human feature engineering. These approaches are currently highly important in IoT applications.

DeLTA received 42 submissions from 20 countries. Nine papers were selected for oral presentation as full papers, 13 for oral presentation as short papers, and 9 for poster presentations.



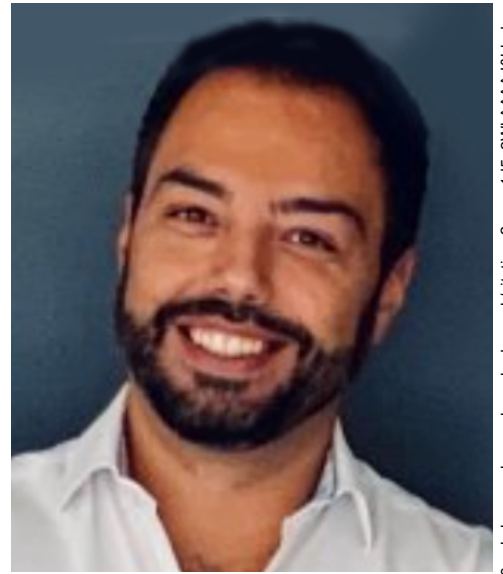


delta.scitevents.org/KeynoteSpeakers.aspx?y=2023

Invited speakers presented the following plenary lectures at DeLTA 2023:

Luís Paulo Reis (left), from University of Porto (Portugal), presented *Deep Reinforcement Learning to Improve Traditional Supervised Learning Methodologies.*”

Davide Bacciu (right), from University of Pisa (Italy), presented *Pervasive AI: (deep) Learning into the Wild.*



o-scholar-google-com.br.um.beds.ac.uk/citations?user=1d5n2WkAAA&hl=de

The conference organization assigned awards to be given during the conference to testify the value of the best contributions: “Best Paper Award”, “Best Student Paper Award” and “Best Poster Award”. The winning papers were chosen by the Program/Conference Chairs based on the best combination of review marks, (assessed by the Program Committee) and presentation quality (assessed by Session Chairs and Program Chairs during the sessions). The winning papers are listed to the right.

We look forward to meeting you at [DeLTA-24](#) in Dijon, France, July 10-11, 2024!



DeLTA 2023 AWARDS

Best Paper Award

TaxoSBERT: Unsupervised Taxonomy Expansion Through Expressive Semantic Similarity
Danilo Croce, Daniele Margiotta and Roberto Basili

Best Student Paper Award

Evaluating Prototypes and Criticisms for Explaining Clustered Contributions in Digital Public Participation Processes
Andreas Nürnberger, Lars Schütz and Korinna Bade

Best Poster Award

Towards Equitable AI in HR: Designing a Fair, Reliable, and Transparent Human Resource Management Application
Michael Danner, Bakir Hadzic, Thomas Weber, Matthias Rätsch and Xinjuan Zhu

Report Submitted by

Carlo Sansone
University of Naples Federico II, Italy
Oleg Gusikhin
Ford Motor Company, USA
Ana Fred
Inst. de Telecomunicações & Univ. of Lisbon, Portugal
Donatello Conte
Université de Tours, France

MVA2023

International Conference on
Machine Vision Applications
July 23-25, 2023
Hamamatsu, Japan



General Conference Chairs

Kyoko Sudo, *Toho University, Tokyo, Japan*
and
Shunsuke Kudo, *The University of
Electro-Communications, Tokyo, Japan*

Program Chairs

Ichiro Ide, *Nagoya University, Nagoya, Aichi, Japan*
and
Wei-Ta Chu, *National Cheng Kung University,
Tainan, Taiwan*

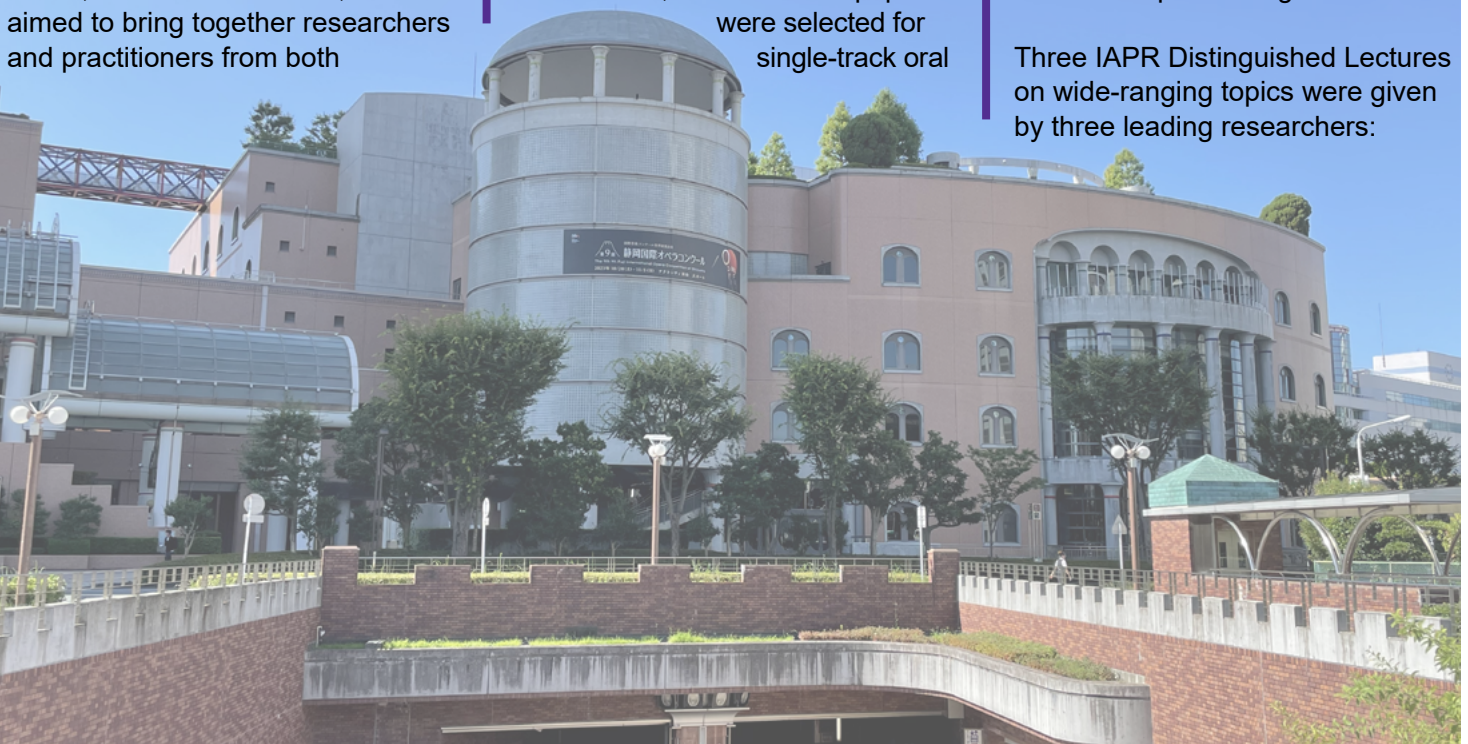
The 18th International Conference on Machine Vision Applications ([MVA 2023](#)) was sponsored by the Institute of Electronics, Information, and Communication Engineers (IEICE), co-organized by IEICE-ISS-PRMU, technical co-sponsored by IEEE-RAS, and endorsed by IAPR. This biennial MVA conference series, established in 1988, has aimed to bring together researchers and practitioners from both

academia and industry, covering the topics of sensing, algorithms, and applications in machine vision research. The venue of the 18th MVA was Hamamatsu, Japan, where 134 participants gathered from 24 countries and areas of the world.

We received 130 full-paper submissions, from which 21 papers were selected for single-track oral

presentation, together with 59 papers for poster presentation, through a rigorous double-blind peer-review process by an international program committee composed of 27 area chairs and 127 reviewers from around the world. The conference proceedings will be made available via IEEE Xplore and the IEICE conference proceedings series.

Three IAPR Distinguished Lectures on wide-ranging topics were given by three leading researchers:





Professor Dima Damen (University of Bristol) presented *Opportunities in Egocentric Video Understanding*.
Professor CC Jay Kuo (University of Southern California) presented *On the 2nd AI Wave: Toward Interpretable, Reliable, and Sustainable AI*.
Professor Kensaku Mori (Nagoya University) presented *How AI Transforms the Medical Field: A Focus on Medical Imaging*.
The financial support from IAPR that enabled us to organize these valuable talks is greatly appreciated, as well as the generous financial support from the Hamamatsu Tourism Bureau for other activities of MVA2023.

A workshop on Small Object Detection Challenge for Spotting Birds was held during the conference. Some winners of the challenge gave presentations as invited talks and posters. After the main conference, two tutorial sessions were given by up-and-coming vision researchers: *Visual Representations in Robot Learning* by Dr. Michael S. Ryoo (Stony Brook University / Google) and *Neural Fields in Visual Computing: Foundations and Applications* by Dr. Shunsuke Saito (Reality Labs Research).

Following the MVA tradition, four awards were presented at the conference:

The Most Influential Paper Over the Decade Award (MIPOD, selected from the papers presented at MVA 2013) was given to *Automatic Polyp Detection in Endoscope Images Using a Hessian Filter* by Yuji Iwahori, Takayuki Shinohara, Akira Hattori, Robert J. Woodham, Shinji Fukui, Manas Kamal Bhuyan, & Kunio Kasugai and *Information Fusion on Oversegmented Images: An Application for Urban Scene Understanding* by Philippe Xu, Franck Davoine, Jean-Baptiste Bordes, Huijing Zhao, and Thierry Denoeux.

The Best Paper Award went to *QAHOI: Query-based Anchors for Human-Object Interaction Detection* by Junwen Chen and Keiji Yanai.

The Best Practical Paper Award was given to *TomatoDIFF: On-plant Tomato Segmentation with Denoising Diffusion Models* by Marija Ivanovska, Janez Perš and Vitomir Struc and *Hardware-Aware Zero-shot Neural Architecture Search* by Yutaka Yoshihama, Kenichi Yadani and Shota Isobe.

The Best Poster Award went to *Age Prediction From Face Images Via Contrastive Learning* by Yeongnam Chae, Poulami Raha, Mijung Kim, and Bjorn Stenger, and *Cross-modal Manifold Cutmix for Self-supervised Video Representation Learning* by Srijan Das and Michael S Ryoo.

The Most Influential Paper over the Decade Award was conferred at the banquet, and the Best Paper Award and Best Practical Paper Award were conferred at the closing session and warmly celebrated by many attendants.

The next MVA will be held in Japan around the same time of the year in 2025.

Report Submitted by

Kyoko Sudo and Shunsuke Kudoh, MVA 2023 General Chairs



20th International Summer School
for Advanced Studies on Biometrics for Secure Authentication:
**20 YEARS OF BIOMETRICS:
Reflections and Outlooks**



Directors

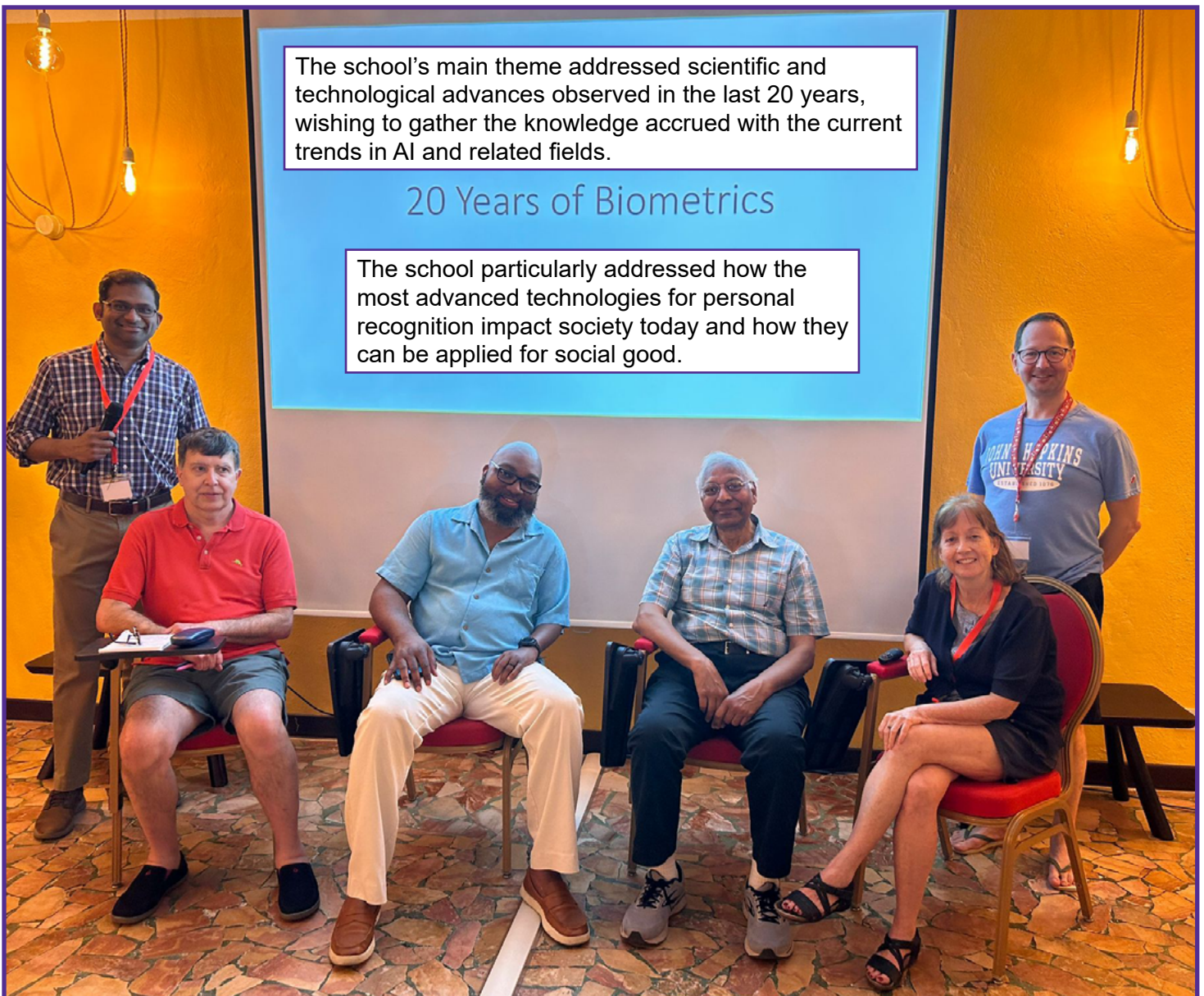
Massimo Tistarelli <i>Computer Vision Laboratory University of Sassari, Italy</i>	Josef Bigun <i>Department of Computer Science Halmstad University, Sweden</i>	Enrico Grosso <i>Computer Vision Laboratory University of Sassari, Italy</i>	Anil K. Jain <i>Biometrics Laboratory Michigan State University, USA</i>
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The 2023 IAPR summer school on biometrics was held from June 5th to 9th in Alghero, Italy. This strongly established training course began in 2003 to promote knowledge dissemination and research in biometrics and related fields. The school was technically co-sponsored by Eurasip (the European Association for Signal Processing), the European Association for Biometrics, IAPR, and IEEE.

The school's main theme addressed scientific and technological advances observed in the last 20 years, wishing to gather the knowledge accrued with the current trends in AI and related fields.

20 Years of Biometrics

The school particularly addressed how the most advanced technologies for personal recognition impact society today and how they can be applied for social good.



Several subjects were taught at the summer school, forming a total of 30 hours of theoretical lectures from 20 different lecturers, two informal round tables, and one panel session.

The subjects ranged from fundamentals, such as machine learning and pattern recognition techniques applied to biometrics, to more advanced topics such as neuroscience, as well as applied subjects such as the design of ethical systems, large-scale evaluation, and the deployment of biometrics technologies in forensic cases.

As evidenced by the school program (right), this 20th edition of the summer school featured a line-up of exceptional lecturers, selected from the editorial boards of top-level scientific journals and conferences. To highlight a few, Prof. Anil Jain, a pioneer in biometrics, started the week by presenting an overview of the progress made in the last two decades and the current state of the art in biometric technologies and the most promising applications for future developments. Prof. Tomaso Poggio, a pioneer in computational neuroscience and machine learning, presented a keynote on recent findings that support the development of a new theory and a mathematical framework for deep learning. Prof. James Haxby, an outstanding neuroscientist from Dartmouth College, presented a lecture on the representation of visual data in the brain and topographic mapping to design such representations from fMRI recordings. Prof. Tal Hassner (Meta research labs) presented an overview of how to deploy deep learning and convolutional neural networks in biometrics. Prof. Arun Ross (Michigan State University) presented a lecture on iris and periocular biometrics. Prof. Massimo Tistarelli, (University of Sassari) proposed a number of open and challenging scientific questions to illustrate the past and the envisioned future of face recognition research. Prof. Anoop Namboodiri (IIT Hyderabad) described the scientific challenges and research outcomes resulting from the most massive deployment of biometrics: the AADHAAR system in India. Prof. Michael King (Florida Tech University) clearly described bias effects in the AI models currently deployed and designed for the development of biometric systems. All lecturers, among the most highly reputed experts in their fields, presented the most up-to-date views in biometric technologies.

Given the recent Covid-19 outbreak, all school sessions were delivered in hybrid mode, allowing participants on site and connected remotely to follow all lectures. Several technological platforms were used to facilitate the engagement of all participants and to maximize the benefits of ongoing discussions, even without physical presence.

THE SCHOOL PROGRAM (LECTURES AND PRESENTERS)

MONDAY JUNE 5

Opening and Presentation of the School Courses

Prof. Massimo Tistarelli - University of Sassari, Italy

20 Years of Biometrics: Reflections and Outlooks

Prof. Anil Jain - Michigan State University, USA

Machine Learning (for Biometrics)

Prof. Alessandro Verr - University of Genova, Italy

Gait and Soft Biometrics and Some Practical Issues

Prof. Mark Nixon - University of Southampton, UK

Deep Learning for Biometrics

Prof. Tal Hassner - Meta, USA

Deep Learning: Compositional Sparsity

Prof. Tomaso Poggio - MIT, USA

TUESDAY JUNE 6

Speaker Recognition

Prof. Nicholas Evans - EURECOM, France

Hands on Fingerprint Recognition with

OpenCV and Python

Prof. Davide Maltoni - University of Bologna, Italy

Iris and Peri-ocular Recognition

Prof. Arun Ross - Michigan State University, USA

30 Yrs of Face Recognition Research:

Reflections & Outlooks

Prof. Massimo Tistarelli - University of Sassari, Italy

Morphing Attack Detection

Prof. Christoph Busch - Hochschule Darmstadt, Germany

WEDNESDAY JUNE 7

30 Years of Face Recognition Evaluations

Dr. Jonathon Phillips - NIST, USA

Federated Learning for Biometric Applications

Prof. Vishal Patel - Johns Hopkins University, USA

THURSDAY JUNE 8

Commonality of the Fine-Grained Structure
of Neural Representations

Prof. James Haxby - Dartmouth College, USA

Mechanisms for Face Recognition in Humans

Prof. Ida Gobbini - University of Bologna, Italy

Panel Session on 20 Years of Biometrics

Anil Jain, Michael King, Alice O'Toole,

Jonathon Phillips, moderated by Arun Ross

AI in Security for Biometrics

Dr. Fernando Duca - Armatura, USA

Understanding Face Representations in Deep CNNs:

Turning the Black Box White

Prof. Alice O'Toole - University of Texas at Dallas, USA

Exploiting Biometrics: An Industrial Perspective

Dr. Laurent Kazdaghi - Idemia, France

FRIDAY JUNE 9

Forensic Biometrics: The Use of Biometric Data and
Databases in Forensic Applications

Prof. Didier Meuwly - Netherlands Forensic Institute, Netherlands

Understanding Bias in Biometrics

Prof. Michael King - Florida Tech University, USA

Biometrics, Ethics and Algorithms

Prof. Emilio Mordini - Responsible Technology, France

Concluding Remarks and Discussion

Prof. Massimo Tistarelli - University of Sassari, Italy.



The school program was enriched by 2 round tables, held on Tuesday and Thursday evening, on the impact of current concerns in the application of AI and the need for the development of ethical systems. On Thursday afternoon, a panel on the last 20 years of biometrics research, moderated by Prof. Arun Ross, involved a stimulating discussion with 4 panelists: Prof. Anil Jain, Prof. Michael King, Prof Alice O’Toole, and Dr. Jonathon Phillips. All participants greatly appreciated these additional sessions and actively contributed to the discussion.

Particular attention was given to the systems used for lecturing and to share data:

- Our main broadcast platform was Zoom Meetings, which allowed us to fully control the audio and video of the lecturers and participants. The technical staff carefully monitored the sessions and facilitated the participation of the audience, both on site and online, by enabling the audio-video resources whenever needed at the end of each lecture or during the lecture.

- Slack was used to provide a fast communication channel among all participants and lecturers. This allowed easy exchange of documents and messages, as well as quick calls for discussion without the need to share personal data such as phone numbers or email addresses.

Thanks to the Zoom platform, remote students were able to participate directly or by submitting questions and comments in written form online. In this way, even the most shy students could be actively involved and interact easily with the lecturers.

To allow all participants to follow all lectures, despite time-zone differences, all lectures were recorded and made available at the end of each day for two weeks.

School participants were offered the opportunity to display a poster on their research activity (posted for the entire week) and to submit a research paper to be orally presented at a special session on Monday evening.



Sixty participants, mainly from European countries, but also from India and Rwanda, attended the school lectures. The class was formed by students, researchers, professionals and officers from different universities, research centers, private companies and public offices in the following 10 countries (in brackets is the number of participants): Belgium (1), France (5), India (2), Italy (12), Norway (1), Rwanda (27), Singapore (1), Switzerland (5), UK (5), USA (1).

The availability of a remote connection allowed many students from the underdeveloped country of Rwanda to participate by eliminating travel costs. The 27 participants from Rwanda were also unable to get visas. The other 33 participants attended in person.

This year's students demonstrated a strong interest in the impact of AI models in the development of novel biometric technologies. Most of them are either working directly in the design of biometric systems, for deployment in society or pursuing high-level scientific research in the field. This not only facilitated the interaction between students and lecturers, but also stimulated and challenged even the most experienced lecturers with questions and requests

for explanations during almost all presentations. As a result, both the students and lecturers have been much involved in technical discussions and plans for collaborations.

During the unique introductory keynote delivered by Prof. Anil Jain, possibly the most outstanding and highly reputed scientist in the field of biometrics, discussion was actively encouraged, resulting in very interesting conclusions on several aspects of biometrics and the application to forensic science, as well as to other scenarios involving the greater public.

Out of the 60 participants, 35 students benefited from a full or partial scholarship to cover registration fees, thanks to financial support generously provided by Armatura, Eurasip, the European Association for Biometrics, IAPR, IDEMIA, the IEEE Biometrics Council, and Thales. All sponsors were widely advertised during the school week.

For future editions of the school, we plan to continue the open evening discussions. These informal meetings were very much appreciated and provided several promising ideas for further research and discussion.



Report Submitted by

Massimo Tistarelli



Report on Summer School on Biometrics 2023

Palak Verma

The 20th International Summer School for Advanced Studies on Biometrics for Secure Authentication offered a comprehensive program covering a broad spectrum of biometric topics, including emerging trends, ethical considerations, and practical applications. Renowned experts in the field delivered informative lectures and presentations, providing a holistic overview of the advancements and challenges in biometric technologies. Attending this summer school enabled me to gain new knowledge and insights in the field of biometrics.

As a result of what I learned during the summer school, I intend to implement several changes in my research approach and practices. Firstly, I will incorporate the emerging trends and advancements we discussed into my ongoing research, ensuring that my work remains up-to-date and relevant. Secondly, I will keep in mind the ethical considerations highlighted during the summer school in my future projects, ensuring that privacy and security concerns are adequately addressed. Lastly, I will utilize the practical applications discussed to enhance the effectiveness and efficiency of biometric authentication methods in my future work.

This experience was incredibly valuable for several reasons. The comprehensive knowledge gained from the summer school expanded my understanding of biometric technologies, enabling me to stay at the forefront of the field. This knowledge will directly contribute to the advancement of my scientific and professional career.

The interactive nature of the summer school allowed me to engage in stimulating discussions and receive valuable feedback from experts and fellow attendees. I had the privilege of presenting three of my research articles related to the field of biometrics. These presentations were well-received and provided a platform for engaging discussions among fellow researchers. This exchange of ideas and insights further enhanced my learning experience.

Furthermore, the networking opportunities provided during the summer school allowed me to establish connections with professionals and peers from diverse backgrounds. These connections have the potential to lead to collaborations and mentorship, bolstering my growth and development in the field of biometrics.

In conclusion, the “20th International Summer School for Advanced Studies on Biometrics for Secure Authentication” was an exceptional educational experience that provided new knowledge, influenced my future approach and practices, and proved to be a valuable platform for intellectual growth and networking within the biometrics community. I am grateful to the International Association for Pattern Recognition (IAPR) for their support, which enabled me to attend this enriching learning opportunity. I highly recommend this summer school to other students interested in the field of biometrics.

1. Verma, P., Selwal, A. & Sharma, D. IVIDNet: Intelligent iris vitality detection via weighted prediction score level fusion. [2023] DOI: 10.1007/s11042-023-15421-x

2. Verma, P., Selwal, A. & Sharma, D. A survey on data-driven iris spoof detectors: state-of-the-art, open issues and future perspectives. (2023). DOI: 10.1007/s11042-022-14014-4

3. Verma, P., Selwal, A. & Sharma, D. An exploration of pre-processing approaches for iris spoof detectors. [2022]. DOI: 10.1109/CISES54857.2022.9844401.



Report on 20th International Summer School on Biometrics
Deepika Sharma
Central University of Jammu

This year's International Summer School on Biometrics provided valuable insights into the past 20 years of biometrics research as well as state-of-the-art research going on in this active field. It was really a great platform to learn from eminent researchers across the world working in the field of biometrics. The BSS'23 was a valuable and enriching experience, providing participants with a comprehensive understanding of various biometric topics. The program covered important areas such as fingerprint, face, iris, gait biometrics, presentation attack detection, morphing attack detection, deep learning in face perception recognition, brain signals for biometrics and many more. The program also introduced the potential of federated learning for biometric applications, preserving privacy while improving accuracy. Deep learning techniques, particularly convolutional neural networks, were discussed in the context of face perception recognition, inspiring participants to leverage these methods for enhanced system performance. The exploration of brain signals as a biometric modality opens up new possibilities for authentication.

Participating in group and panel discussions on emerging topics in biometrics was highly beneficial. These engaging forums provided a platform for diverse perspectives, enabling a deeper understanding of the subject matter and encouraging collaborative learning. Such interactions facilitate the exchange of innovative ideas, insights, and best practices, thereby contributing to the advancement and application of biometric technologies in various fields.

This event facilitated networking and collaboration with renowned researchers and with peers, fostering a global network of biometrics experts. The emphasis on ethical considerations highlighted the responsible and ethical use of biometric technologies.

Overall, this experience has equipped participants with in-depth knowledge, insights, and a broader perspective on biometrics. It will guide future actions, including advancements in the field of biometrics, robust attack detection, exploration of federated learning, integration of deep learning, and research on brain signals. The International Summer School on Biometrics has significantly contributed to my growth and development as a researcher in the field of biometrics.

IAPR BULLETIN BOARD FOR ITEMS OF GENERAL INTEREST TO PATTERN RECOGNITION FOLKS

REMEMBER!
↓

The "IT: Instituto de Telecomunicações" @ Covilhã (Portugal) will hire one researcher (Ph.D.) in the area of **Pattern Recognition and Automatic Learning** having the following tasks:

- 1) Research in *Data Science* including: artificial intelligence and machine learning, analysis, coding, description, mining, visualization, protection, and communication of multimedia information.
- 2) Publish results in high-impact scientific journals and conference venues.
- 3) Write project proposals for competitive funding sources.

Remuneration is set by article 23 (3) of RJEC, corresponding to level 33 of the Salary Table, approved by Order no. 1553-C/2008 of December 31st, i.e.: 2,153.94 Euros/month.

Any national, foreign and stateless candidate(s) holding a **doctorate degree in Physics, Mathematics, Computer Science, Electrical Engineering, or a related area** and having a suitable scientific and professional curriculum may submit an application. Any manifestations of interest should be sent to Hugo Proença hugomcp@di.ubi.pt

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MEETING AND EDUCATION PLANNER

Conference dates and venues may change due to COVID-19 concerns. Some may be held online.
 Visit IAPR.org/conferences or specific conference websites for the most up-to-date information.

Conferences and Dates

2023

Links to Previous Reports, plus
 Venues & Paper/Application Deadlines

Month	Dates	Meeting (shaded = IAPR application for support pending)	Previous Report	Venue	Paper Deadline
Nov	3-5	CVIP 2023 8th International Conference on Computer Vision and Image Processing	2022	Jammu, JK India	Closed
	5-8	ACPR 2023 7th Asian Conference on Pattern Recognition	2021	Kitakyushu Japan	Closed
	27-30	CIAPR 2023 26th Iberoamerican Congress on Pattern Recognition	2021	Coimbra Portugal	Closed
Dec	1-3	CCBR 2023 17th Chinese Conference on Biometric Recognition		Xuzhou China	Closed
	10-11	CVMI 2023 2nd International Conference on Computer Vision and Machine Intelligence	2022	Gwalior India	Closed
	12-15	PReMI 2023 10th International Conference on Pattern Recognition and Machine Intelligence		Kolkata India	Closed

2024

Feb	24-26	ICPRAM 2024 13th International Conference on Pattern Recognition Applications and Methods	2023	Rome Italy	Closed
	25-27	ROBOVIS 2024 4th International Conference on Robotics, Computer Vision and Intelligent Systems		Rome Italy	Closed
	27-29	VISAPP 2024 19th International Conference on Computer Vision Theory and Applications	2023	Rome Italy	Closed
April	15-18	DGMM 2024 3rd IAPR International Conference on Discrete Geometry and Mathematical Morphology	2022	Florence Italy	Closed
June	12-14	ISPR 2024 4th International Conference on Intelligent Systems and Pattern Recognition	2022	Istanbul Turkey	Mar 15 2024
	18-21	ICPRAI 2024 4th International Conference on Pattern Recognition and Artificial Intelligence	2022	Jeju Island South Korea	Dec 15 2023
Aug/Sep	30-4	ICDAR 2024 18th International Conference on Document Analysis and Recognition	2021	Athens Greece	Feb 1 2024
Dec	1-5	ICPR 2024 27th International Conference on Pattern Recognition	2022	Kolkata India	Mar 20 2024

2026

Aug	16-20	ICPR 2026 - 28th International Conference on Pattern Recognition	2022	Lyon France	TBD
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Please email
 comments
 or ideas to
 EiC or LE!
 Thank you!