THE INTERNATIONAL ASSOCIATION FOR PATTERN RECOGNITION

iapr.org

IAPR Newsletter

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Volume 47, Number 2, Apr 2025

Inside this Issue

ICPR 2024 INDIA

SPECIAL ICPR 2024 ISSUE!

27TH International Conference on Pattern Recognition
December 01-05, 2024, Kolkata, India

From the Editor's Desk, on ICPR 2024 stationery...

For the 27th time since 1973 — this time in Kolkata, India — the International Conference on Pattern Recognition was yet again a successful gathering of academic and industry researchers in pattern recognition and related areas. This **Special ICPR 2024 Issue** *includes a comprehensive summary of the event, paying homage to the many ways in which this flagship conference is integrated into the life of the IAPR community. In this issue, our usual features reflect that integration: the EDI column is on Women at ICPR; The Next Generation article is from the winner of the Zamperoni Award for the Best Student Paper at ICPR 2024; the Getting to Know IAPR Fellows feature is an opportunity to browse and reflect on the contributions of the new Fellows, conferred at ICPR 2024. And the full conference report, linked here, is a celebration of the many excellent talks and other events that took place under the umbrella of ICPR 2024. Of course, this issue also includes all the usual information — calls for papers, TC News, ExCo news and meeting planner, etc., along with several other meeting reports in a new, fun, easy-to-read format. The added ICPR content made this special issue significantly longer than most, but we think you will find what you're looking for quite easily. To assist, pages related to ICPR are published with this familiar teal-blue and yellow background that brought you so many ICPR 2024 event announcements and paper deadlines over the past two years. Symbolic of past events, these background colors are muted, as fond memories so often are. Here's to many more fond memories at future editions of ICPR!*

~ Carolyn Buckley, Layout Editor

P.S. Meeting reports will look different! Please read this page to learn how and why.

The views expressed in this newsletter represent the personal views of the authors and not necessarily those of their host institutions or of the IAPR.

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	2025	Calls and Deadlines (in order from earliest **paper deadline**, other deadlines vary in order)
DLG 2025 July 7-9, 2025 Bertinoro, Italy	2nd Summer School on Deep Learning on Graphs	Hurry! **Application:** May 1, 2025
IWAIPR 2025 October 14–17, 2025 Varadero, Cuba	IX International Congress on Artificial Intelligence and Pattern Recognition	**Papers:** May 11, 2025
ICCPR 2025 October 24–26, 2025 Beijing, China	14th International Conference on Computing and Pattern Recognition	**Papers:** June 5, 2025
ACPR 2025 November 10–13, 2025 Gold Coast, Australia	The 8th Asian Conference on Pattern Recognition	**Papers:** June 10, 2025
ISPR 2025 September 25–27, 2025 Hammamet City, Tunisia	5th International Conference on Intelligent Systems and Patterns Recognition	**Papers:** June 30, 2025
ICPRS 2025 December 1–4, 2025 Vina Del Mar, Chile	15th International Conference on Pattern Recognition Systems	**Papers:** Aug 1, 2025
CVIP 2025 December 10–13, 2025 Rupnagar, India	10th International Conference on Computer Vision and Image Processing	**Papers:** Aug 10, 2025
CIARP 2025 (no link) November 25–28, 2025 Bogota, Colombia	28th Iberoamerican Congress on Pattern Recognition	**Papers:** TBD
	2026	
ICDAR 2026 August 30 to Sept. 4, 2026 Vienna, Austria	20th International Conference on Document Analysis and Recognition	**Papers:** Feb 1, 2026
S+SSPR 2026 August 24–26, 2026 Bern, Switzerland	Joint IAPR International Workshops on Statistical Techniques in Pattern Recognition and Structural and Syntactic Pattern Recognition	**Papers:** May 15, 2026
ICPR 2026 August 16-20, 2026 Lyon, France	28th International Conference on Pattern Recognition	**Papers:** TBD

28TH INTERNATIONAL CONFERENCE ON PATTERN RECOGNITION

Lyon, France, August 17-21, 2026
International Convention Center

PRELIMINARY CALL FOR PAPERS

The International Conference on Pattern Recognition (ICPR) is the leading event of the International Association for Pattern Recognition, recognized as a top conference in the field. It encompasses a wide range of topics where Pattern Recognition methods are applied in fields including Computer Vision, Machine Learning, Image Processing, Speech and Natural Language Processing, and Sensor Pattern Processing. The 28th ICPR, to be held in 2026, offers an excellent platform for students, academics, and industry researchers to foster new ideas and collaborations.

General Chairs
- Jean-Marc Ogier, France
- Tin Kam Ho, USA
- Cheng-Lin Liu, China
- Daniel Lopresti, USA

Program Chairs
- Maria De Marsico, Italy
- Frederic Jurie, France
- Ingela Nyström, Sweden
- Arun Ross, USA
- Liang Wang, China

Local Arrangements Chair
- Véronique Eglin, France

Financial Chair
- Bertrand Kerautret, France

Workshop Chairs
- Lu Shijian, Singapore
- Ida-Maria Sintorn, Sweden

Tutorial Chairs
- Xiaoyi Jiang, Germany
- Zhaoxiang Zhang, China
- Luc Brun, France

Exhibition/Demos Chair
- Dung Duc Nguyen, Vietnam

Publications Chairs
- Shin'ichi Satoh, Japan
- Faisal Shafait, Pakistan
- Camille Kurtz, France

Reproducible Research Chair
- Miguel Colom, France

Challenge Chairs
- Anatoly Nemirko, Russia
- Thierry Paquet, France
- Anto S. Nugroho, Indonesia

Sponsorship Chairs
- Mickaël Coustaty, France
- Srirangaraj Setlur, USA

Women in ICPR Chairs
- Lale Akarun, Turkey
- Alexandra Branzan Albu, Canada
- Jing Dong, China

(Chairs to be completed/confirmed)

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

Tentative Dates
- Workshop proposal: November, 2025
- Workshop acceptance: End December, 2025
- Paper submission: December, 2025
- Reviews sent to authors: March, 2026
- Paper rebuttal: March, 2026
- Paper acceptance: March, 2026
- Camera-ready submission: May, 2026

site: https://iapr.org/icpr2026
contact: contact@icpr2026.org

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, exec-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; and 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 38 companies –from Adobe to Zhongan Technology– offering internships, locations (some remote), requirements, etc.

NOTE: As of Jan 25, 2024, 45 opportunities are listed, 30 of them with continuous or flexible application cycles.

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 students and junior students to the latest trends and techniques in a 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.

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***.

Send proposals to IAPR Secretariat Linda O'Gorman (exec-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.

From the ExCo...

The Evolution of IAPR Technical Committees

By Lale Akarun
Former 1st Vice President of IAPR

We are excited to see this Special ICPR Issue of *IAPR Newsletter,* reviewing in one place the many reports and announcements associated with the 27th International Conference on Pattern Recognition (ICPR) held in Kolkata, India.

The new ExCo for the term 2024-2026 has initiated its activity during Q1 2025. One of the first tasks was to appoint the chairpersons and members for the different Standing and Technical Committees. The complete list can be found at the IAPR website.

The IAPR is grateful for the many volunteers who participate in various committees, organize conferences, summer and winter schools, etc. We thank you for your dedication, and would like to have more people engaged in the association. There are many levels of invovlement, and all are important. If you are willing to contribute, please contact the ExCo through the Executive Secretariat.

50th Anniversary(ies) of the IAPR. Celebratory activities took place during ICPR 2024, but the celebration will continue! New activities will be organized for ICPR 2026, culminating in the grand celebration at ICPR 2028, officially marking 50 years since our incorporation and first Governing Board meeting in 1978. If you have ideas about activities to celebrate the anniversary, or memories or photos to share, please let us know by emailing 50th@iapr.org. Be sure to check out our history, where you will see an Anniversary video describing the early days of IAPR and how we have grown. Learn more about the 50th Anniversary here.

IAPR Endorsed and Sponsored Conferences. Many Conferences and Workshops under the umbrella of the IAPR will be held next year around the world. Visit the Conference Schedule section of the IAPR website for details about locations, dates, and deadlines.

Organizers of conferences and workshops under the umbrella of the IAPR must be aware of the sponsorship/endorsement rules and the application process. More details can be found here.

You may have noticed recent changes in some of our IAPR Technical Committees. Such is the dynamic nature of TCs. They are born and grow in myriad ways; some go to sleep, and some are reawakened.

An IAPR Technical Committee (TC) is set up to create a community of researchers in a certain technical specialty of Pattern Recognition to increase research activity in that area. After a TC is "born," i.e., established by the Governing Board (GB), it attracts new members and increases its activities, organizing summer schools, training programs, competitions, and workshops. Some IAPR TCs grow to have their own annual conferences, such as the International Conference on Document Analysis and Recognition (ICDAR), organized by TC10 and TC11. Some have conferences with other organizations, such as the International Joint Conference on Biometrics (IJCB) of TC4, which is organized jointly with IEEE.

Other TCs require more time to grow, either because their scope is narrow or because the specialty has its own community outside of IAPR. The IAPR Bylaws allow the merging or dissolution of existing committees by the GB. If a TC "goes to sleep," i.e., is inactive for an extended period, it can be suspended by the GB. However, as activity and interest increase, a TC can also be reactivated by the GB.

During ICPR 2024, a new TC was born when the Governing Board approved the establishment of TC22, Reproducible Research in Pattern Recognition (RRPR). The RRPR community has been active for a long time; it organized its fifth workshop during ICPR 2024. Now, it will establish links with a larger community under the umbrella of TC22. The GB also approved the reactivation of TC8 with a new name, Machine Vision for Industrial Applications. Another name change was approved: TC7 changed its name to Earth Observation to better reflect the broad interests of its community.

We welcome our new, reawakened, and growing TCs, and wish success to all existing IAPR Technical Committees.

~Lale Akarun

Chenghao Qian

Editor's note: Chenghao Qian received the **Piero Zamperoni Award at ICPR 2024**, *given to students with excellent results, for his paper entitled "AllWeather-Net: Unified Image Enhancement for Autonomous Driving Under Adverse Weather and Low-Light Conditions." You will find interesting aspects of his research in this article!"*

~ Heydi Méndez-Vázquez , EiC

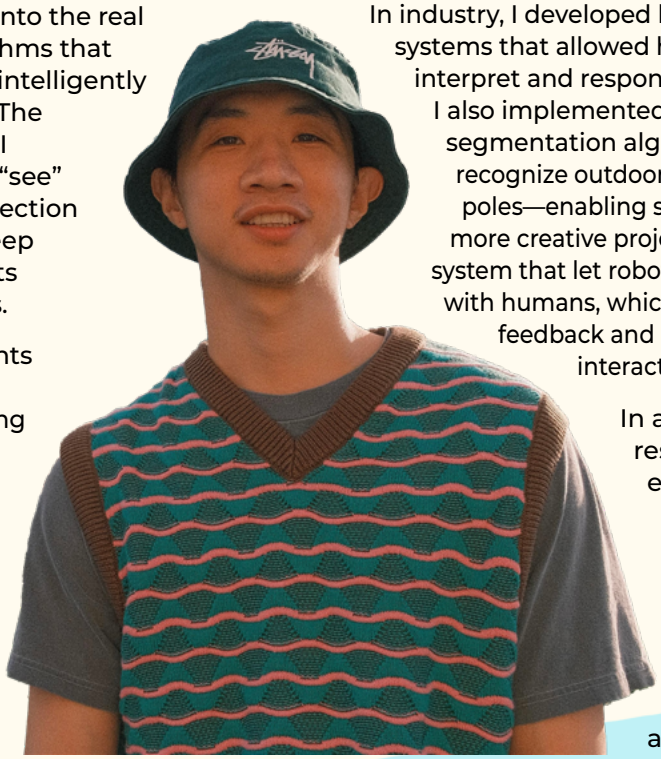
Chenghao Qian holds a master's degree from the University of Sydney with a background in computer science. With several years of experience in the robotics industry, he became particularly interested in the challenges autonomous systems face in complex outdoor environments. This curiosity led him to pursue a Ph.D. in Computer Vision at the University of Leeds, where his research focuses on improving the safety of autonomous driving systems—especially under challenging weather conditions. He explores the use of generative models to overcome data scarcity and domain shift issues in perception systems, with the goal of making autonomous vehicles more reliable and adaptable in real-world conditions.

How did you get involved in pattern recognition?

I was first introduced to pattern recognition during a deep learning module in my master's program. As part of the course, I worked on a project involving handwritten digit recognition. It was my first hands-on experience with machine learning, and I was fascinated by the idea of teaching machines to recognize and interpret human-like patterns.

After graduation, I joined a robotics company, where I had the chance to take this curiosity into the real world. I worked on developing algorithms that allowed humanoid robots to interact intelligently with people and their environments. The more I explored, the more fascinated I became—especially with how robots "see" the world. I dove deep into object detection and semantic segmentation using deep neural networks, aiming to help robots better understand their surroundings.

But working in real-world environments quickly exposed the gap between lab success and field performance. Changing lighting, complex backgrounds, and especially unpredictable weather all posed serious challenges to visual systems. These limitations pushed me toward academic research, where I now focus on enabling robust perception for autonomous vehicles—especially under adverse weather conditions, where reliability is truly critical.



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

My technical work spans both industry and academia, with a focus on embodied robotics and robust visual perception.

In industry, I developed hand gesture recognition systems that allowed humanoid robots to interpret and respond to human instructions. I also implemented object detection and segmentation algorithms to help robots recognize outdoor obstacles like trees and poles—enabling safer navigation. One of the more creative projects involved developing a system that let robots play rock-paper-scissors with humans, which received positive feedback and helped make human-robot interaction more engaging.

In academia, my PhD research focuses on enabling autonomous vehicles to operate reliably under challenging weather conditions. I address three major challenges: **visual degradation**, **dataset deficiency**, and **domain shift**.

Visual degradation occurs when weather elements such as snowflakes or raindrops obscure the camera's view, introducing noise into perception. Existing methods that remove weather artifacts or apply style transfer often lead to limited improvements—or even worsen performance by introducing visual artifacts. In response to these challenges, we developed a unified framework named AllWeather-Net that enhances visual perception across multiple weather conditions without requiring separate models for each. The results are shown in Figure 1.

To address dataset deficiency, we recognized that most autonomous driving datasets are collected in clear weather, making them less effective for training models that need to generalize to adverse conditions. Bad weather is inherently unpredictable and location-dependent, making real-world data collection difficult. To overcome this, we developed a data augmentation framework using fine-tuned diffusion models to generate realistic weather scenes. These synthetic images are then used to train semantic segmentation models, significantly improving performance in challenging environments.

To further enhance the realism of the generated images, we utilized large language models to craft detailed textual prompts. These prompts guided the diffusion model to produce highly realistic and diverse driving scenes under adverse weather conditions. The resulting models showed substantial performance gains, demonstrating the power of synthetic data to improve real-world generalization.

Looking ahead, my research will focus on developing a comprehensive 3D evaluation framework for autonomous driving under adverse weather conditions. The goal is to move beyond standard benchmark testing and create a rich simulation environment that captures both the complexity of weather phenomena and the dynamic behavior of road users. To achieve this, I will leverage cutting-edge techniques such as 3D Gaussian Splatting and Neural Radiance Fields to reconstruct highly realistic driving scenes. But beyond visual realism, I aim to incorporate behavioral realism—by modeling how human drivers perceive risks, adapt to uncertainty, and make decisions in adverse weather. This opens the door to a new line of research where we can compare, evaluate, and even transfer insights from human strategies to autonomous systems. Ultimately, this framework will not only serve as a testbed for next-generation perception algorithms but also as a platform for bridging the gap between human intuition and machine intelligence in complex, real-world driving scenarios.

How can the IAPR help young researchers?

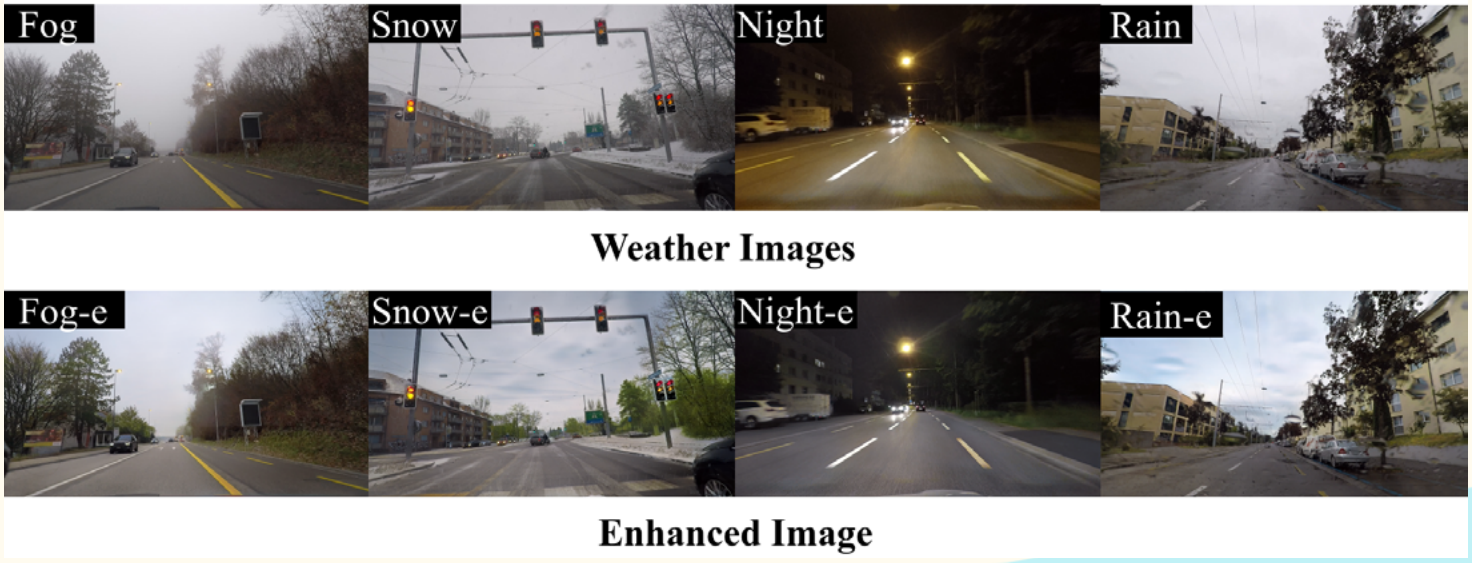
The IAPR plays a key role in supporting early-career researchers by offering a global platform for visibility, connection, and mentorship. Through conferences like ICPR and its technical committees and regional initiatives, IAPR provides important opportunities to present work, receive feedback, and build meaningful professional networks.

To make a deeper impact in today's competitive research landscape, I believe the IAPR can offer more structured and accessible support mechanisms. One area of opportunity is mentorship. Rather than relying on informal interactions at events, the IAPR could introduce cross-institutional, cross-regional mentorship groups to connect senior researchers with small cohorts of young researchers, focusing on practical guidance for publishing, setting research directions, applying for grants, and navigating academic careers.

Engagement through digital platforms is also essential. Making recorded conference sessions available on platforms like YouTube would extend the reach of these events and offer valuable learning resources for those unable to attend. Additionally, highlighting exceptional papers or projects on social media could increase exposure for emerging researchers and help cultivate a more open, inclusive, and connected global research community.

~ Chenghao Qian

Fig. 1. Comparison of original weather images and enhanced images by AllWeather-Net.



IAPR Equality, Diversity & Inclusion

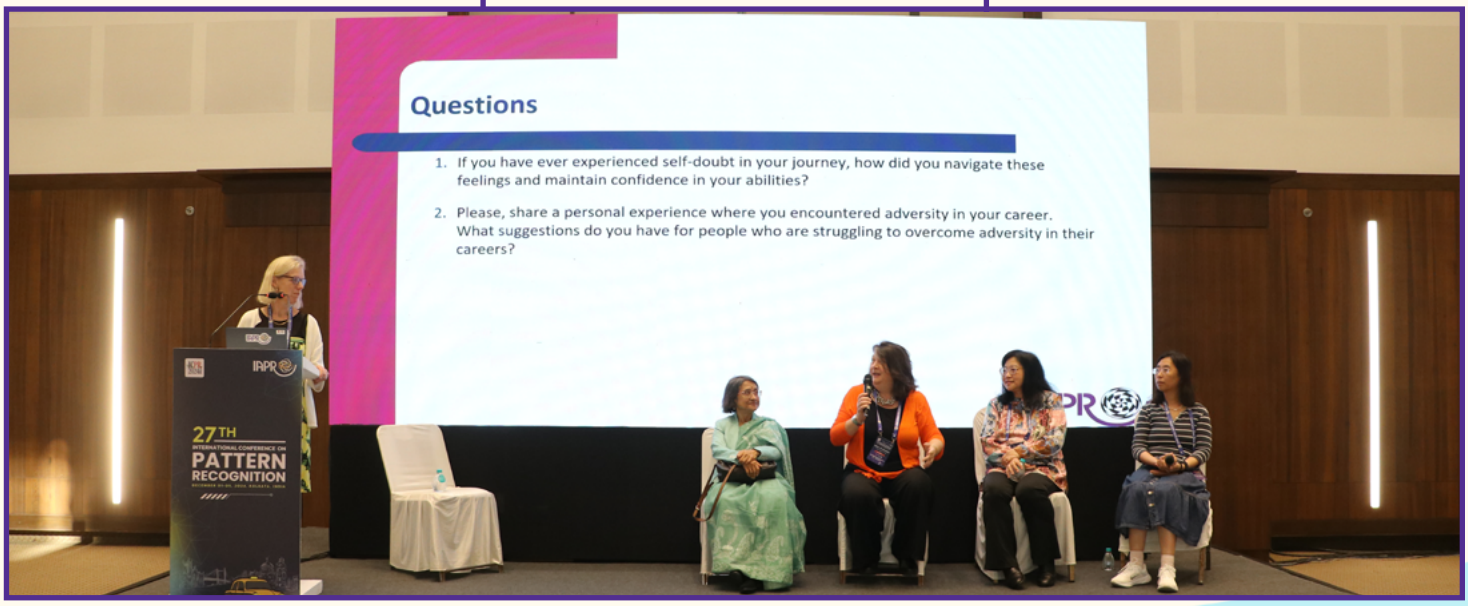
Note from your EiC, LE, and EDI Committee Chair: This feature of the IAPR Newsletter *is devoted to advertising activities and news from the IAPR Standing Committee on Equality, Diversity and Inclusion (EDI). The statement of IAPR Policy on EDI can be found here. Our goal in this regular feature is to 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."***

Report from the W4PR Panel (Women for Pattern Recognition) at ICPR 2024

As this issue contains reports about the last edition of the IAPR flagship conference, ICPR 2024, we take this great occasion to share with our readers a brief report about the W4PR event (Women for Pattern Recognition) held during the conference, which has become a tradition at ICPR.

W4PR stems from an initiative started as an informal meeting moment among women attending the conference. The first edition to host this meeting time was ICPR 2016 in Cancun, Mexico, with a women's coffee break and a special Mexican lunch sponsored by the conference organizers. The lunch initiative was continued at ICPR 2018 in Beijing, China. Unfortunately, pandemic emergency forced the community to meet only online for the 2020 edition, held in Milan. Despite this, it was in this edition that the conference organizers agreed to host a workshop as a more structured occasion to discuss open problems related to the gender gap in research. The organizers of the first panel were Alexandra Branzan Albu, Ingela Nyström, Bob Fisher, Lale Akarun, Irene Amerini, Marcella Cornia, and Maria De Marsico. The fruitful presentations and discussions encouraged us to organize a similar event, a panel in person, at ICPR 2022 in Montréal, Canada.

The 2024 edition of the W4PR session was organized by Ingela Nyström, supported by a committee including Alexandra Branzan Albu (University of Victoria, Canada), Jing Dong (Chinese Academy of Sciences, Beijing), Linda O'Gorman (Executive IAPR Secretariat), and Sarbani Palit (Indian Statistical Institute, Kolkata). I had the honor to be invited as one of the panelists, as the chair of IAPR EDI Committee, together with Tin Kam Ho (IBM Research, USA), the 2024 KS Fu Award winner and Industry representative; Sushmita Mitra (Indian Statistical Institute, Kolkata, India), as representative of Senior Academia; and Guoying Zhao (University of Oulu, Finland), the 2024 Maria Petrou Award winner.



W4PR 2024 Panelists: *(left to right)* Tin Kam Ho, Sushmita Mitra, Guoying Zhao, and Maria De Marsico

The theme of this panel session was *Embracing Resilience, Assertiveness and Allyship to Empower Women in the IAPR Community*. The opening was a warm and insightful welcome video (available on IAPR's YouTube Channel) by Alexandra Branzan Albu, who illustrated the importance of these three words in women participation in the scientific life.

Disruptive events are common in personal and professional life, and can often leave women wondering how to recover. Rather than 'bouncing back' after a disruptive event, resilience can be considered as the ability to 'bounce up' to a better condition [1, 2].

Unfortunately, this can be more difficult when the disruptive event is not a single (albeit large) change, like academic restructuring, but is instead a whole new and ever-changing set of responsibilities such as pregnancy and caregiving, which should be happy and should not completely wipe out professional goals. Resilience and "bouncing up" might be easier to imagine after single events, which, though disappointing, must be appropriately tackled to learn and gain from them. Yet, applying these concepts is a positive way to move forward from any disruption, be it daily or a one-time disaster [3].

Assertiveness is being active for oneself and proactive for weaker mates. As Alexandra underlined, this characteristic and the ways of expressing it are different between men and women. In particular, some researchers (see for example [4]) notice that young women students tend to be less assertive than men in classrooms (or, maybe, just less aggressive).

Allyship is a kind of attitude that goes beyond nice relationships. It entails a real engagement in supporting our women colleagues to challenge discrimination in the working and research environment. While resilience and assertiveness are personal characteristics that can be personally trained, allyship is a kind of group relationship that entails interpersonal support, in which men colleagues too can play a relevant role [4].

After this enlightening introduction the moderator Ingela Nyström continued with a Q&A session, where the panelists took turns in generously giving their personal experiences. The questions reflected common problems that can be encountered by both men and women, but for the latter may become more critical. The most stimulating ones were the following:

1. If you have ever experienced self-doubt in your journey, how did you navigate these feelings and maintain confidence in your abilities?

2. Please, share a personal experience where you encountered adversity in your career. What suggestions do you have for people who are struggling to overcome adversity in their careers?

3. How could failure – or success – be seen as a learning opportunity?

The interesting outcome, though normal to expect, was that all the panelists have experienced some troubles in their working life, from family problems to wrong choices due to some kind of discrimination. The panelists were, however, able to learn from troubles and go ahead without giving up, which is what they aimed to transmit to the panel attendees. In a number of cases, questions from the audience and conversations continued after the panel session had ended.

There were approximately 40 participants in the room with a majority being more junior, but senior colleagues also attended. There were mainly women, and a number of men also participated. We see this as an excellent example of effective, non-biased allyship.

We are looking forward to future W4PR events!

~ Maria De Marsico and Ingela Nyström

[1] Freischlag, J. A., & Silva, M. M. (2016). Bouncing Up: Resilience and Women in Academic Medicine. *Journal of the American College of Surgeons, 223(2)*, 215–220. https://doi.org/10.1016/j.jamcollsurg.2016.03.033

[2] Duchek, S., Foerster, C., & Scheuch, I. (2022). Bouncing Up: The Development of Women Leaders' Resilience. *Scandinavian Journal of Management*, 38 (4). https://doi.org/10.1016/j.scaman.2022.101234.

[3] Maxwell, J. C. (2015). *Sometimes You Win - Sometimes You Learn*. New York, NY: Center Street.

[4] Warren, M. A., & Bordoloi, S. D. (2022). What Women Faculty Want in Allied Men. *Inside Higher Ed*. https://www.insidehighered.com/advice/2022/03/10/what-exceptional-male-allies-do-support-female-faculty-opinion

THEN AND NOW: WOMEN IN IAPR

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.

SELECTION CRITERIA

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. If more GEs participate in the proposal, a wide geographic distribution will be preferred to assure a wider submission population; these proposals will be preferred.
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 and/or individually.

Proposals are submitted about one year in advance with respect to the requested submission slot (i.e., the period in which submissions will be uploaded). We divide each year into four quarters, starting in January, April, July, and October. We collect proposals during the first month of the quarter of the year before (e.g., for a Jul-Sept 2026 Special Issue, proposals are collected July 2025). Decisions are made in the second month of the quarter of the year before (e.g., Aug 2025), and prospective GEs are notified in the third month of the quarter of the year before (e.g., Sept 2025). In this way, our decision can be made by comparing all proposals for the same quarter.

For candidate GEs' convenience, a proposal template with all requested information is available.

More details can be found in the documents available here:

After filling the appropriate template, proposals can be submitted via Computer Science Journal Special Issues and Conference Proceedings Proposals

For further inquiries, please contact the EiC for Special Issues, Prof. Maria De Marsico at demarsico@di.uniroma1.it

IAPR MEMBER NEWS

Congratulations from IAPR

Anil Jain

Receives Prestigious BBVA Foundation Frontiers of Knowledge Award

Editor's Note: The IAPR Newsletter *is always pleased to have exciting news to share about an IAPR member. In this case, that member is Prof. Anil Jain.*

Prof. Jain has been very active in the IAPR for many years, serving on the Governing Board and many IAPR Committees. Among his many external honors, Prof. Jain also received the 2008 King-Sun Fu Prize, the highest honor bestowed by IAPR, and was named a Fellow of IAPR 1996.

We warmly congratulate Anil Jain, and his joint awardee, Michael I. Jordan, on receiving the 2025 BBVA Foundation Frontiers of Knowledge Award in Information and Communication Technologies.

We are grateful to BBVA Foundation for permission to reprint a portion of their announcement (below). The full announcement can be found here.

The BBVA Foundation Frontiers of Knowledge Award in Information and Communication Technologies goes in this seventeenth edition to **Anil Jain** (Michigan State University, United States) and **Michael I. Jordan** (University of California, Berkeley, United States, and National Institute for Research in Digital Science and Technology, INRIA, Paris, France) for what the committee refers to as their "core contributions" to machine learning, which have unlocked "applications of far-reaching impact on society as a whole."

21 January, 2025

Over the last four decades, the two awardees have made vital contributions enabling computers to recognize patterns and generate predictions from large-dimension data sets, powering the advance of such transformative technologies as biometrics and artificial intelligence.

Jain's research has focused on pattern recognition, leading to "monumental contributions" – in the words of the committee – in recognizing people through fingerprints or face ID, with technologies that are now being massively deployed in the security domain, both in criminal investigations and for accessing mobile phones and other electronic devices.

In parallel, Jordan's independent efforts in the machine learning field "provided unified algorithms for statistical and probabilistic inference," said the committee, "enabling computers to make accurate predictions from observed data." His achievements laid the mathematical foundations for generative AI models such as those powering ChatGPT, and the development of recommender systems, like the one used by Amazon, that inform the economic decision-making of both consumers and businesses.

For the committee, the contributions of Jain and Jordan have had a transformative impact "on everyday life," leaving "an indelible stamp on the fabric of today's – and tomorrow's – information-rich society."

IAPR FELLOW

Getting to Know (the new) IAPR Fellows

Congratulations to the Recipients of IAPR Fellow Awards at ICPR 2024

Rajendra Acharya

Australia

For significant contributions to AI algorithms and biomedical applications

Rongrong Ji

China

For contributions to neural network compression and efficient visual recognition

Shengcai Liao

China

For contributions to face and person recognition and re-identification

Yiu-ming Cheung

Hong Kong

For contributions to the fields of cluster analysis and visual computing as well as their applications

Lianwen Jin

China

For contributions to document image analysis and recognition, particularly scene text detection and recognition

Qingshan Liu

China

For contributions to computer vision and pattern recognition

Michael Joachim Paulus Felsberg

Sweden

For contributions to visual object tracking

Mohan Kankanhalli

Singapore

For contributions to multimedia content processing and multimedia security

Sébastien Marcel

Switzerland

For pioneering contributions to biometric presentation attack detection

Clinton Fookes

Australia

For contributions to computer vision, machine learning and pattern recognition across video analysis, biometrics, and biosignal processing applications

Xi Li

China

For contributions to multi-factor coupling model learning, adaptive network model design, and knowledge-guided structural semantic understanding

João Paulo Papa

Brazil

For contributions to graph-based approaches in pattern recognition and metaheuristics for optimizing pattern classifiers and for service to IAPR

Continued...

Congratulations to the Recipients of IAPR Fellow Awards at ICPR 2024

Vishal M. Patel
United States of America
For contributions to image processing, computer vision and biometrics

Yoichi Sato
Japan
For contributions to computer vision and for service to IAPR

Yi Yang
China
For contributions to cross-media analysis and visual object retrieval

Yu Qiao
China
For contributions to facial image analysis and video understanding

Zhen Wang
China
For contributions to behavior patterns of AI agents and humans, as well as their applications

Zhaoxiang Zhang
China
For contributions to pattern recognition and visual perception

Elisa Ricci
Italy
For contributions to multimodal human behaviour analysis and adaptation methods for visual recognition models

Junchi Yan
China
For contributions to (quantum) graph optimization especially with machine learning and computer vision for remote sensing

Wei-Shi Zheng
China
For the contribution to person re-identification and action recognition

IAPR Research Scholarships help Early Career Researchers engage in international and inter-institutional research.

Scholarships cover round trip travel and basic living expenses for research visits under 12 months.
Applications may be submitted at any time before the visit starts.

Candidate must be a full-time researcher with between one and eight years experience and must be a member of an IAPR Member Society.
Click here to learn more or contact the IAPR Executive Secretariat Linda O'Gorman at exec-secretariat@iapr.org

IAPR RESEARCH SCHOLARSHIPS

Technical Committee News

In this issue

Click on a Title to Skip to the TC

TC 1

IAPR TC1 Statistical Pattern Recognition Techniques

iapr.org/tc1

Chair: Konstantinos Sechidis (Novartis, Switzerland)
Vice Chair: Maura Pintor (University of Cagliari, Italy)

AIMS: To promote interaction and collaboration among researchers working directly in statistical pattern recognition and machine learning and among those specialized in other fields using or developing statistical techniques. In this relation, it is of particular interest to stimulate links with many mathematical statisticians, theoreticians, and practitioners alike who work at present outside the pattern recognition and machine learning communities.

TC1 would like to announce our new leadership team: Konstantinos Sechidis (Novartis, Switzerland) is the new Chair of TC1, and Maura Pintor (University of Cagliari, Italy) is our new Vice Chair. Ambra Demontis (University of Cagliari), former Chair, is now on our Advisory Board, along with Battista Biggio (University of Cagliari) and Simone Scardapane (Sapienza University, Italy). If you are interested in the activities of IAPR TC1, we welcome you! Please visit our website and join our mailing list.

TC 2

IAPR TC2 Structural & Syntactical Pattern Recognition

iapr.org/tc2

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

AIMS: To promote interaction and collaboration among researchers working on Structural and Syntactical Pattern Recognition (SSPR). Since 1996, the IAPR TC1 and TC2 jointly organize 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 syntactic pattern recognition techniques.

The deadline to apply for DLG 2025, the 2nd IAPR Summer School on Deep Learning on Graphs, is very soon! Don't miss your chance to take part in this event Submit your application by May 1, 2025. The school will take place in Bertinoro (Italy) from the 7th to the 9th of July, 2025. A group of international speakers will deliver two days of lectures incorporating both theoretical and hands-on practical sessions. The event will also include a sharing session for PhD students to showcase their current research and interact with both their peers and the lecturers. A number of IAPR-sponsored scholarships to financially support students in need are available. Visit the website for more information.

Technical Committee News, Cont.

In This Issue

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IAPR TC2 Structural & Syntactical Pattern Recognition

iapr.org/tc2

Continued

The TC2 is also pleased to announce the introduction of the "research spotlight," a new section of the TC2 website dedicated to showcasing research achievements of members of the TC2 community. If you want your research to be featured on our page, please send an email to Bai Xiao at baixiao@buaa.edu.cn. This month's research spotlight features Prof. Jun Zhou, the current president of the Australian Pattern Recognition Society. Click here for more information.

We are also happy to announce that the 2026 edition of the Joint IAPR International Workshops on Statistical Techniques in Pattern Recognition and Structural and Syntactic Pattern Recognition (S+SSPR) will take place in Bern (Switzerland), August 24 - 26, 2026. In line with past editions, S+SSPR 2026 will take place in close temporal and spatial proximity to ICPR 2026 (August 16 - 20, 2026, Lyon, France) to encourage participants to attend both events.

IAPR TC4 Biometrics

iapr.org/tc4

Chair: Shiqi Yu (Southern University of Science and Technology, China)
Vice Chair: Vitomir Štruc (University of Ljubljana, Slovenia)

Aims: 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 and workshops, publications, standardization, databases, evaluations, research groups, and other biometrics news.

The 9th IAPR/IEEE Winter School on Biometrics (WSB 2025) was successfully held from January 12 to 16, 2025, in Shenzhen, China. The theme of this winter school was foundation models and generative artificial intelligence. Jointly organized by the Department of Computer Science, Hong Kong Baptist University, the Institute of Automation, Chinese Academy of Sciences and the Department of Computer Science and Engineering, Southern University of Science and Technology, and technically co-sponsored by the IAPR TC4 and IEEE Biometrics Council, the success of WSB 2025 reinforced its role as a premier platform for knowledge exchange in biometrics. Click here to read the full report, included in this issue of the *IAPR Newsletter.*

Technical Committee News, Cont.

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TC 4

IAPR TC4

Biometrics

iapr.org/tc4

Continued

The 2025 edition of the International Joint Conference on Biometrics (IJCB) will be held in Osaka, Japan, September 8-11, 2025. The IJCB combines two major biometrics research conferences: the International Conference on Biometrics (ICB), by IAPR TC4; and the Biometrics Theory, Applications and Systems (BTAS) conference, by IEEE Biometrics Council. The blending of these two conferences is through a special agreement between the IAPR TC4 and the IEEE Biometrics Council. IJCB 2025 presents an exciting event for the entire worldwide biometrics research community. The deadline for main conference papers is closed, HOWEVER, competitions (right) are still open!

Ten Competitions

will be held in conjunction with IJCB 2025.
Participants welcome! For competition details, click here.

1. 1st International StepUP Competition for Biometric Footstep Recognition.
2. Liveness Detection Competition – Iris (LivDet-Iris 2025).
3. Adversarial Attack Challenge for Secure Face Recognition (AAC).
4. The 6th International Competition on Human Identification at a Distance (HID 2025).
5. Fingerprint Liveness Detection Competition.
6. Exploring Dense Optical Flow for Gait Recognition: A challenge on the OUMVLP-OF Gait Dataset.
7. AG-VPReID 2025: The 2nd Aerial-Ground Person ReID.
8. The 9th Sclera Segmentation Benchmarking Competition (SSBC 2025).
9. Second Competition on Presentation Attack Detection on ID Cards.
10. The 2nd Latent in the Wild Fingerprint Recognition Competition 2025.

For more information about competitions, tutorials, special sessions, demos and exhibitions, the doctoral consortium, or any other conference info, visit the website, linked here: IJCB 2025

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TC 4

IAPR TC4

BIOMETRICS

iapr.org/tc4

CONTINUED

The 22nd International Summer School for Advanced Studies on Biometrics for Secure Authentication, SSB 2025, will be held from June 2nd to 6th, 2025, in Alghero, Italy. For the past 21 years, this international summer school has provided an active and dynamic forum to closely follow the most recent developments in biometrics science and technology. This year's main topic will be the impact of generative AI on the development and deployment of biometrics in different application domains, addressing several important questions.

How can we mitigate bias in biometric systems? How can we design privacy-preserving and "ethical" biometric devices? What can we learn from human perception? How do we better deploy current AI approaches? How do we cope with adversarial attacks in biometric recognition? What is the scalability and real potential for biometric systems? What is the potential impact of biometrics in forensic investigation and crime prevention?

Lectures will be given by 18 outstanding experts in the field, from both academia and industry. Open sessions will be organised with questions and answers moderated by leading experts in the field. Watch for our report on this annual event, to be published in an upcoming issue of the *IAPR Newsletter.*

RISE AI Conference will be held October 6-8, 2025, at the University of Notre Dame in Notre Dame, Indiana, USA. The world is in a transformative era, with AI revolutionizing industries, reshaping innovation, and unlocking opportunities once thought impossible. Its vast potential inspires optimism for a future where technology drives progress across industries, governments, NGOs, and society as a whole. However, with this promise comes significant responsibility. Concerns over bias, inequitable access, safety vulnerabilities, and ethical uncertainties highlight the urgent need for a guiding framework. RISE (Responsibility, Inclusion, Safety and Ethics) AI fulfills this role,

ensuring that AI technologies are developed and applied responsibly, inclusively, and ethically. The RISE AI Conference provides a unique platform to explore how artificial intelligence can be harnessed to tackle complex societal and contemporary challenges while upholding the principles of RISE.

Organizers welcome abstract submissions for research addressing interdisciplinary AI-driven solutions to societal challenges by April 30, 2025. Accepted abstracts may be chosen for oral presentations, poster sessions, or invited to submit a longer paper for potential inclusion in an edited book or journal. Learn more at R.I.S.E.AI.

Technical Committee News, Cont.

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TC 6

IAPR TC6 Computational Forensics

iapr.org/tc6

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

Aims: IAPR TC6 works to promote research, development, and education in Computational Forensics (CF) and to provide a platform for cooperation and exchange by researchers, practitioners, and teachers from the various disciplines of computational and forensic sciences. CF is an emerging research domain. It concerns the investigation of forensic problems using computational methods. The primary goal is the discovery and the advancement of forensic knowledge. CF involves modeling, computer simulation, computer-based analysis, and recognition in studying and solving forensic problems.

Image Source: warwick.ac.uk/fac/sci/dcs/research/siplab/AI4MFDD2025

TC6 successfully organized the Workshop on Artificial Intelligence for Multimedia Forensics and Disinformation Detection, AI4MFDD 2025, February 28th at the 2025 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), in Tucson, Arizona. The workshop disseminated recent developments in AI-enabled multimedia forensics and disinformation detection methods. The program comprised twelve oral presentations, which were selected based on the strength of the contributions and the reviewers' comments. The program was enriched by two keynote speakers, who covered topics related to multimedia forensics and deepfake detection: Prof Mauro Barni from The University of Siena, in Italy, and Prof Vitomir Štruc from The University of Ljubljana, in Slovenia.

TC6 is currently organizing the International Workshop on Media Verification and Integrity (VERIMEDIA) to bring together experts, researchers, and media professionals to explore innovative strategies for verifying digital content and addressing misinformation. The workshop will include paper presentations, a demo and panel session and keynote presentations from Prof. Sébastien Marcel (IDIAP Research Center, Switzerland) and Martino Jerian (CEO and Founder, Amped Software). This workshop will take place the July 3, 2025, in Rome, Italy, in conjunction with the International Joint Conference on Neural Networks, and will address the rising challenges of AI-generated content and deepfakes by exploring advancements in multimedia forensics, deepfake detection, adversarial machine learning, AI-generated media attribution, and multimodal analysis. A key focus is lifelong media authentication, emphasizing AI's role in safeguarding media integrity by analyzing diverse media types—text, images, videos, and speech. The session highlights the critical importance of combating disinformation and ensuring trustworthy information across fields like forensics, fake news debunking, cyberattack mitigation, and politics. The primary objective is to bring together experts from these varied fields, policy makers and stakeholders to share challenges and solutions and foster collaborative discussions.

For more information on these and other TC6 events, visit our website at iapr.org/tc6

Technical Committee News, Cont.

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IAPR TC7 Earth Observation

iapr.org/tc7

Chair: Sylvain Lobry (Université Paris Cité, France)
Vice Chairs: Ksenia Bittner (German Aerospace Center (DLR), Germany)
Charlotte Pelletier (Southern Brittany University, France)
Marc Rußwurm (Wageningen University, The Netherlands)

Aims: TC7 promotes pattern recognition methods for analyzing Earth observation data collected from satellites or airborne sensors. In addition, it offers an opportunity for interested researchers to understand better the many diverse research topics in remote sensing that require contributions from the pattern recognition community.

The 13th Pattern Recognition in Remote Sensing workshop (PRRS 2024), organized by IAPR TC7 (with local organization by Ujjwal Verma and Johannes Leonhardt), was held on December 1st, during ICPR 2024, and featured six presentations and two keynotes! We would like to thank IEEE GRSS and IAPR for their sponsorship. A full report is included in the special ICPR 2024 section of this issue of *IAPR Newsletter*.

Get more TC7 News:

Follow IAPR TC7 now on Bluesky and LinkedIn. You can also find our latest newsletter, featuring events relevant for the Earth Observation community and upcoming deadlines.

IAPR TC8 Machine Vision for Industrial Inspection

iapr.org/tc8
Online May 2025

Chair: Zheng Liu (University of British Columbia, Canada)
Co-Chair: Hiroyuki Ukida (Tokushina University, Japan)

Aims: The primary objective of TC8 is to promote and coordinate research, development, and dissemination of knowledge in machine vision for industrial inspection. This TC aims to bridge the gap between academia and industry by fostering collaboration among researchers, engineers, and practitioners. It also seeks to establish standards and best practices that can guide the application of machine vision technologies in various industrial sectors.

Logo image from www.tc-iaip.org/qcav/2025/

QCAV2025 Quality Control by Artificial Vision

TC8 is organizing a session entitled *Machine Vision for Industrial Inspection: from Datasets to Algorithms* at the 17th International Conference on Quality Control by Artificial Vision (QCAV2025), Yamanashi, Japan (June 4-6, 2025). Dr. Liu (TC8 Chair) will also give a plenary talk entitled *Machine Vision for Industrial Inspection: Bridging Datasets, Algorithms, and Solutions* at QVAC2025.

The Engineering Institute of Canada (EIC), founded in 1887 and now a federation of 14 Canadian Engineering Societies, recently elected Dr. Zheng Liu, Chair of TC8, as a Fellow of the EIC.

Zheng Liu and Hiroyuki Ukida will contribute to a book chapter on “Machine Vision for Visual Inspection” in the new edition of the *American Society for Nondestructive Testing (ASNT) Handbook: Visual Inspection.*

Technical Committee News, Cont.

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IAPR TC9 Pattern Recognition in Human Machine Interaction

iapr.org/tc9

Chair: Patrick Thiam (Ulm University, Germany)
Vice Chairs: Friedhelm Schwenker (Ulm University, Germany)
Mariofanna Milanova (University of Arkansas at Little Rock, USA)

Aims: TC09 promotes the use of pattern recognition methods in human-machine interaction (HMI), and intends to offer opportunities for interested researchers to gain a better understanding of the many diverse research topics in remote sensing that require contributions from the pattern recognition community.

TC 9 warmly welcomes our new Chair, Patrick Thiam (Ulm University).

Call for Papers for Special Issue: *Multimodal Pattern Recognition of Social Signals in HCI (2nd Edition)*. For more information, click here.

IAPR TC10 Graphics Recognition

iapr.org/tc10

Chair: KC Santosh (University of South Dakota, USA)
Vice Chair: Momina Moetesum (National Univ of Science and Technology, Pakistan)
Communications Officer: Christophe Rigaud (University of La Rochelle, France)

Aims: IAPR TC10 on Graphics Recognition promotes interaction among researchers working in document image analysis in general, and graphics recognition in particular. Graphics Recognition is an exciting field of pattern recognition, whose main relevant topics of interest include, but are not limited to: Analysis and interpretation of graphics and graphical elements in all forms of graphical documentation and heterogeneous documents; Raster-to-vector techniques; Forensics in graphic documents; 3-D models from multiple 2-D views line drawings; Camera-based graphics recognition; Graphics detection and recognition in real scenes. See our website for a more comprehensive list of relevant topics.

TC10 GRAPHICS RECOGNITION IAPR

The IAPR Technical Committee on Graphics Recognition (TC-10) is proud to host the 16th International Workshop on Graphics Recognition (GREC 2025) this September in Wuhan, China, (in conjunction with ICDAR 2025). GREC is a premier venue for researchers and practitioners to share ideas and advances in graphics recognition and document analysis. With strong participation from both academia and industry, the workshop maintains a unique and interactive "workshop spirit" fostering in-depth discussions rather than following a traditional conference model. The program includes:

- Thematic Sessions on Key Topics in Graphics Recognition
- Invited Talks Outlining State-of-the-Art and Open Challenges
- Short Presentations on Recent Advances
- Engaging Panel Discussions to Drive Collaborative Thinking

Researchers at all levels are encouraged to submit their work and participate in this vibrant community.

Important Dates

Abstract Submission Deadline: **May 25, 2025**
Full Paper Submission Deadline: **May 31, 2025**
Acceptance Notification: **June 20, 2025**
Camera-Ready Deadline: **June 27, 2025**

For more information, read the Call for Papers.

Technical Committee News, Cont.

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TC 12

IAPR TC12 Multimedia and Visual Information Systems

iapr.org/tc12

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

Aims: 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.

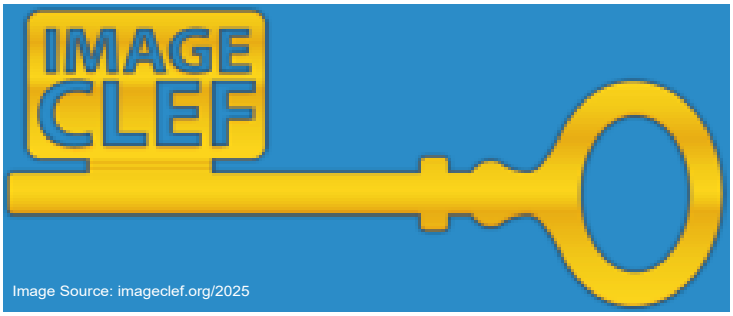

Image Source: imageclef.org/2025

ImageCLEF 2025 is an evaluation campaign, organized as part of the CLEF (Conference and Labs of the Evaluation Forum) labs. Target communities include (but are not limited to): information retrieval (text, vision, audio, multimedia, social media, sensor data, etc.); machine learning; deep learning; data mining; natural language processing; image and video processing; and computer vision, with special attention to the challenges of multi-modality, multi-linguality, and interactive search.

2025 Tasks

ImageCLEFmedical Automatic Image Captioning

ImageCLEFmedical Synthetic Medical Images Created via GANs

Plus others:

ImageCLEFmedical Visual Question Answering

ImageCLEFmedical Multimodal And Generative TelemedICine (MAGIC)

Image Retrieval/Generation for Arguments

ImageCLEFtoPicto

ImageCLEF Multimodal Reasoning

IMPORTANT DATES
(MAY VARY DEPENDING ON THE TASK)

Run submission: **May 10, 2025**
Working notes submission: **May 30, 2025**

CLEF 2025 Conference
September 9-12, 2025, Madrid, Spain

FG 2027 - Call for Proposals to Host the Conference

The Steering Board of the IEEE International Conference on Automatic Face and Gesture Recognition (FG), the IEEE Biometrics Council, and IEEE Computer Society are seeking meeting site proposals for the 2027 edition of FG. In keeping with past rotations between the Americas, Europe, and Australia-Asia, preference for FG 2027 will be given to proposals from Europe. FG 2025 is being held in Florida, USA, and FG 2026 will be organized in Asia. All communications for FG 2027, including requests for information and proposal submission, should be sent to the FG Steering Board Chair, Albert Ali Salah, at: a.a.salah@uu.nl.

Details are linked in the FG 2027 Call for Site Proposals.

IMPORTANT DATES

Notification of intent by **May 15, 2025**
Draft proposal for initial feedback by **June 15, 2025**
Full proposals due by **September 15, 2025**

Technical Committee News, Cont.

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TC 22

IAPR TC22 Reproducible Research in Pattern Recognition

iapr.org/tc22

Chair: Federico Bolelli
(University of Modena and Reggio Emilia, Italy)
Vice Chair: Bertrand Kerautret
(LIRIS, Université Lumière Lyon 2, France)

Aims: Reproducibility is a cornerstone of robust and impactful science. TC22 was created to promote and support reproducible practices within the pattern recognition community. Our goals include fostering tools, platforms, and standards that make it easier for researchers to share code, data, and results in a transparent and verifiable way.

Technical Committee 22 on Reproducible Research in Pattern Recognition

We are pleased to officially introduce the new IAPR Technical Committee on Reproducible Research in Pattern Recognition (TC22)

TC22 builds on years of successful activity through the RRPR workshop series, which has been hosted at recent ICPR editions and is widely supported by the community. Although our general goals are stated above, we wish to reiterate that ***our long-term aspiration is to establish a recognized reproducibilility verification schema*** *that can be adopted by leading conferences and journals worldwide, supporting a future where reproducibility is not just encouraged but expected at the highest levels of scientific publication.*

What We Do

TC22 is working on several initiatives, including:

- Organizing reproducibility-focused workshops, tutorials, and summer schools
- Maintaining a GitHub-based platform for sharing RR resources and community contributions
- Promoting awareness and best practices through newsletters, webinars, and open discussions
- Establishing strong connections with other IAPR TCs and the broader scientific community

Meet the TC22 Team

Federico Bolelli, Chair, does research at the intersection of computer vision, image processing, and medical imaging, with a strong commitment to reproducibility and open science. **Bertrand Kerautret**, Vice Chair, is a long-standing organizer of the RRPR series, and is also the original promoter of the TC22 proposal. We are joined by **Dan Lopresti** (Lehigh University, USA), fostering inter-TC collaboration and external links, and **Miguel Colom** (ENS Paris-Saclay, France) leading editorial initiatives for reproducibility dissemination and coordinating with international reproducibility networks. **Hugues Talbot** (Centrale Supelec, France) oversees workshop coordination, and **Jonathan Weber** (Université de Haute-Alsace, France) manages the GitHub team and community engagement. Finally, **Nelson Monzón López** (ULPGC, Spain) coordinates reproducibility resources.

Join us!

TC22 welcomes all IAPR members who are interested in promoting transparency, replicability, and openness in scientific research. Whether you're an experienced researcher or new to the topic of reproducibility, there's a place for you in our growing community. Reproducibility is a cross-cutting concern that touches all areas of pattern recognition! *TC22 complements and does not compete with your existing TC membership.* In a recent survey conducted during the formation of TC22, *over 65% of 80 respondents expressed a strong willingness to participate*, either as active contributors or committee members, highlighting a clear and enthusiastic demand for initiatives like this within the pattern recognition field.

If you'd like to get involved, collaborate, or simply stay informed about upcoming activities, don't hesitate to reach out. Contact the Chair at federico.bolelli@unimore.it

Recent News

TC22 is excited to share that the post-proceedings of the RRPR 2024 workshop, held in conjunction with ICPR in Kolkata, is available in the Springer LNCS series. This fifth edition of the RRPR workshop attracted strong interest from the community and featured high-quality contributions, along with valuable discussions on tools, platforms, and best practices for reproducibility. A full report is included in the Special ICPR section of this *IAPR Newsletter*.

Meeting Reports

Conferences, Workshops, & Summer/Winter Schools

Welcome to the *IAPR Newsletter*'s NEW Meeting Reports Section

Easier to scan for the information you want and more fun to browse for the information you didn't know you wanted!

What Has Changed and How?*

Layout

External links to conference websites are easier: Just click on any conference banner to visit their site. New icons (right) help you find specific information.

NEW Research-based Content

The "Join In" feature of Meeting Reports aims to inform readers about cutting-edge research and showcase the important problems and solutions under consideration at each event.

We are asking event organizers to briefly describe at least one research **question or problem** discussed at their meeting, the solutions under consideration, and the consensus on the best solution, if available. Where no consensus was reached, we ask what methodology, technology, or deeper understanding is needed to move forward.

Our goal is to facilitate new, cross-disciplinary ways of thinking and new collaborations among our readers.

Added Benefits for Meeting Organizers**

- Decreased reporting workload (submit a short Event Report Form online rather than writing a whole report)
- Increased visibility of your meeting: Reports are shorter and (we hope) more fun to read.
- Increased interdisciplinary interest in future editions of your event through the sharing of intriguing research questions.

Notes: * These changes do not apply to Summer and Winter School Reports.

** **Organizers:** To make the most of these benefits, be sure to answer and check for accuracy all parts of every question on the Event Report Form. **We encourage you to assign a trusted attendee before your event to think about the question highlighted above during your event and submit an answer for the report afterwards. Authors will be acknowledged.**

Goals **Meeting goals and communities served** (location and/or interests) are described in a box of this color.

Organizers **Top-level organizers** are listed in a box of this color beneath the meeting banner, with a link to a complete list of organizers, if available.

Venue

Previous Venues

Sponsors, Hosts, and/or Supporting Organizations

Submissions Information
(number of submissions, review protocol, number of papers and posters accepted).

Countries Represented

Keynotes

Invited Talks

Awards Best Papers, Best Posters

Social and Cultural Programs

Join In! Research Commentary

Proceedings Info & Link

Workshops

Competitions

Tutorials

Doctoral Consortia

CVIP 2024

December 19-21

9th International Conference on Computer Vision and Image Processing

Goals

The goal of the CVIP (International Conference on Computer Vision and Image Processing) is to provide a platform for researchers, academicians, and industry professionals to share their latest advancements in computer vision, image processing, and related fields.

Organizers

General Chairs
Umapada Pal
Indian Statistical Institute, Kolkata, India
Mohan Kankanhalli
National University of Singapore, Singapore

Conference Chairs
Jagadeesh Kakarla
IIITDM Kancheepuram, India
Subrahmanyam Murala
Trinity College Dublin, Ireland

Click for Complete List of Organizers

IIITDM KANCHEEPURAM CHENNAI, INDIA

Previous Editions
Jammu, India (2023), Nagpur, India (2022), Ropar, India (2021), Allahabad, India (2020), Jaipur, India (2019), Jabalpur, India (2018), and Roorkee, India (2016 & 2017)

Hosted by IIITDM KANCHEEPURAM, CHENNAI, INDIA. Endorsed by IAPR

Submissions Recieved: **648**
3 Reviewers per Submission
Oral Presentations: **140 (22%)**
Poster Presentations: **38**

Competition
CAPSULE VISION 2024 CHALLENGE
Multi-Class Abnormality Classification for Video Capsule Endoscopy (more information here)

10 Countries Represented

Proceedings by Springer CCIS

Keynotes

R Venkatesh Babu
Indian Institute of Science, Bangalore, India
Advancing Fairness and Precision in Text to Image Generative Models

Yasushi Yagi
Osaka University, Japan
What Can We Know from Gait?: Look at the Cutting Edge Progress in Gait Recognition

Fahad Khan
Mohamed bin Zayed University of Artificial Intelligence, Masdar City, Abu Dhabi
Towards Detailed Understanding of the Visual World

Laurent Najman
Gustave Eiffel University, France
The Watershed Operator and Its Applications in Machine Learning

Vikram M. Gadre
Indian Institute of Technology Bombay, India
Different Avenues for Uniting Multiresolution Processing with Machine Learning and Neural Networks

Nikita Pinto
Mathworks, India
AI-driven Computer Vision for Engineered Systems: From Design to Deployment

Awards

IAPR Best Paper
Transforming Single Photon Camera Images to Color HDR Images
Sumit Sharma, Girish Rongali & Kaushik Mitra

IAPR Best Student Paper
SemUV: Deep Learning Based Semantic Manipulation Over UVtexture Map of Virtual Human Heads
Anirban Mukherjee, Venkat Suprabath Bitra, Vignesh Bondugula, Tarun Reddy Tallapureddy, & Dinesh Babu Jayagopi

CVIP Best Paper
Gender Recognition of Silkworm Cocoons Using X-ray Images
Vijayarajan Rajangam, Nikhilesh Goud B, Bharath Suram, Saideepak Reddy Kasireddy, & Arunkumar A N

CVIP Best Student Paper
AutoTagGen: A Semantic Approach for Image Tagging Utilising Large Language Models and Community Verified Integrative Knowledge
Swati Parida, Raghav Khullar, Manav Aggarwal, & Gerard Deepak

CVIP Best Industry Paper
Diffmamba: Leveraging Mamba for Effective Fusion of Noise and Conditional Features in Diffusion Models for Skin Lesion Segmentation
Amit Shakya, Shruti Phutke, Chetan Gupta, Rupesh Kumar, Lalit Sharma, & Chetan Arora

CVIP Best Poster
SkyGuard: Semi-Supervised Drone Technology for Real-time Traffic Rule Enforcement
Vipin Gautam, Sara Thakare, Shitala Prasad, & Clint Pazhayidam George

Join In!
Research Commentary

A key research question discussed at CVIP 2024 was: “How can we improve the robustness of deep learning models in real-world computer vision applications?” While deep learning models perform well on benchmark datasets, they struggle with real-world variations like occlusions, lighting changes, and adversarial attacks.

Proposed solutions included self-supervised learning, domain adaptation, and hybrid approaches combining deep learning with traditional methods. Researchers also highlighted the potential of physics-informed neural networks and diverse training datasets. Ensuring AI models are not only accurate but also reliable, interpretable, and resistant to adversarial conditions remains an open challenge.

Leading answers included self-supervised learning, domain adaptation, hybrid models, and physics-informed neural networks to enhance deep learning robustness. While there was no single consensus, researchers agreed on the need for diverse datasets, better generalization techniques, and stronger adversarial defenses. More real-world testing and explainability methods are required for reliable AI deployment.

~ Jagadeesh Kakarla

25th DICTA PERTH Nov 27-29, 2024 Western Australia

25th International Conference on Digital Image Computing: Techniques and Applications

Goals

DICTA is the premier conference organized in Australia on computer vision, image processing, pattern recognition, and related areas, serving scientists interested in improving systems associated with these areas of research and application.

Organizers

General Chair: Shams Islam *Edith Cowan University, Australia*
General Co-Chairs: Mohammed Bennamoun *The Univ. of Western Australia, Australia*
Manzure Murshed *Deakin University, Australia*
Ajmal Mian *The University of Western Australia, Australia*

Click for Complete List of Organizers

Perth
Western Australia
Australia, Novotel
Perth Murray Street

Previous Editions (selection)
Melbourne, Australia (1991), Perth, Australia (2019), Online, Australia (2020), Gold Coast, Australia (2021), Sydney, Australia (2022), Port Macquarie, Australia (2023)

Hosted by Edith Cowan University, Australia. Financial Sponsor: Australian Pattern Recognition Society (APRS). IAPR (Endorsed), IEEE (Technical Sponsor), DSTG (Sponsor), Business Events Perth (Sponsor), and others

General Chair, Shams Islam, with volunteers of DICTA 2024. Thank you!

16 Countries Represented

Australia, Japan, France, Taiwan, Germany, China, United Kingdom, Saudi Arabia, Bangladesh, United Arab Emrites, United States of America, Denmark, Austria, Switzerland, Canada, Pakistan

Submissions Recieved: **212**
Double-blind Review with an average of 3 Reviewers per Paper
Oral Presentations: **56 (26%)**
Poster Presentations: **53**

Tutorial
Imaging Workflows in MATLAB with Medical and Geological Examples. Organised by MathWorks. More information here.

Proceedings
available at
IEEE Xplore

Keynotes

Gaurav Sharma
University of Rochester, USA
Visual Data Analytics for Wide Area Motion Imagery

David Suter
Edith Cowan University, Australia
Where Has Computer Vision Gone?

Habib Zaidi
Geneva University Hospital, Switzerland
Deep Learning-powered Multimodality Medical Image Analysis

Michael Milford
Queensland University of Technology, Australia
Trusted, Privacy Compliant and Introspective Positioning Systems

Tanveer Syeda-Mahmood
IBM Fellow, IBM Research, USA
Neuro-Inspired Memories: Driving Next-Generation AI Models for Computer Systems

Habib Zaidi

Michael Milford

Tanveer Syeda-Mahmood

Join In!
Research Commentary

What are Neuro-Inspired Memories and How Can They Drive Next-Generation AI Models for Computer Systems?

Neuroscience has been a building block for artificial intelligence since this field began, as recognized by the recent Nobel prize in Physics for the work on Hopfield networks. Building computational models of different brain systems can give us new insight into the development of next generation computer systems. IBM Research is pioneering one such ambitious project to develop a computational model of the human declarative memory system in the brain. This is intended to serve both as a surrogate for memory-impaired individuals and to guide the design of next-generation computer storage systems.

IBM has developed new neural architectures for semantic and episodic memories as well as representation and encoding methods in the tri-synaptic circuit of the hippocampus.

Tanveer's keynote presented IBM's latest work on developing a foundational model for knowledge to emulate human semantic and episodic memories using cross-linked vision language models. She also described a new neural model of image storage and retrieval called cross-modal Hopfield encoding networks, which make the Hopfield networks more practical for use in computer systems. She then outlined how such new neural architectures are beginning to influence next generation commercial AI systems.

~ Syed Mohammed Shamsul (Shams)

Social and Cultural Programs

Participants enjoyed an industry tour by bus to Down Under Geoscience (DUG) and Edith Cowan University and the Australian Automation and Robotics Precinct, all located in Perth, Western Australia. We also enjoyed a Gala Dinner at Optus Stadium in Perth.

Join us for DICTA 2025
at the Adelaide Convention Center
in Adelaide, Australia!

Awards

APRS/IAPR Best Paper

Matching Confidences and Softened Target Occurrences for Calibration

Vinith Kugathasan, Honglu Zhou, Zachary Izzo, Gayal Kuruppu, Sanoojan Baliah, & Muhammad Haris Khan

IEEE/DSTG Best Student Paper

Enhancing Fine-Grained Visual Recognition in the Low-Data Regime Through Feature Magnitude Regularization

Avraham N Chapman, Hai-Ming Xu, & Lingqiao Liu

DSTG Best Contribution to Science

TESL-Net: A Transformer-Enhanced CNN for Accurate Skin Lesion Segmentation

Shahzaib Iqbal, Muhammad Zeeshan, Mehwish Mehmood, Imran Razzak, & Tariq M Khan

DSTG Women in STEM Best Paper

Evidence-aware Multi-modal Data Fusion and Its Application to Total Knee Replacement Prediction

Xinwen Liu, Jing Wang, S. Kevin Zhou, Craig Engstrom, & Shekhar S Chandra

CSIRO Best Paper in Medical Image Analysis

Decoding Stroke Patterns: A Novel Deep Learning Approach to Atrial Fibrillation Risk Stratification

Mohammad Javad Shokri, Nandakishor Nandakishor, Aravinda S Rao, Angelos Sharobeam, Bernard Yan, & Marimuthu Palaniswami

TCC Best Paper in Digital Identity Management

3D Face Recognition on Low-Quality Data via Dual Contrastive Learning

Yaping Jing, Di Shao, Shang Gao, & Xuequan Lu

DICTA 2024 APRS Early Career Researcher Awards

Dr. Moloud Abdar and Dr. Yang Zhao

CIARP

27th Iberoamerican Congress on Pattern Recognition

2024 Nov 26-29 Talca, Chile

Goals

The Iberoamerican Congress on Pattern Recognition (CIARP) is one of the most relevant scientific events focusing on all aspects of pattern recognition, computer vision, artificial intelligence, data mining, and related areas. Every year, it brings a networking forum for sharing scientific results and experiences on new knowledge and applications on related topics, as well as for increasing cooperation between research groups. It has become a key research event and one of the most important in Pattern Recognition for the Iberoamerican PR societies and community.

Organizers

General Chair: Ruber Hernández-García, Universidad Católica del Maule, Chile
ACHIRP Chair: Cesar Astudillo, Universidad de Talca, Chile
Program Co-Chairs: Sergio Velastin, Queen Mary University of London, UK
Xaviera López, Universidad Católica del Maule, Chile

Visit the website to see all Organizers

Talca, Chile

Hosted by Universidad Católica del Maule, Talca, Chile
Endorsed by IAPR

Previous Editions
26th - CIARP 2023, Coimbra, Portugal
25th - CIARP 2021, Porto, Portugal

Submissions Recieved: **62**
Double-blind, 3 Reviewers per Paper
Oral Presentations: **38 (61%)**
(No Posters)

Countries **13** Represented

Proceedings by Springer LNCS

Tutorials & Educational Opportunities

Tutorial I - *Pattern Recognition Applications on Metagenomics Data*, Organized by Dr. Marco Mora and Sra. Sara Cuadros

Tutorial II - *Pattern Recognition for Smarter and Precision Agriculture,* Organized by Dr. Marco Carrasco, Dr. Sebastian Romero, and Dr. Miguel Araya

1st IAPR LATAM School on Advanced Biometrics Techniques
Organized by Dr. Ruber Hernández, Dr. Gabriel Sánchez, and Dr. Nicolas Guil. A full report is included in this issue of *IAPR Newsletter* (Click here).

Keynotes

Josep Llados, IAPR Secretary
Universitat Autònoma de Barcelona, Spain
Relational Reasoning in Document Intelligence: Graph-based Representations for Document Understanding

Julian Fierrez, IAPR TC4 Biometrics Chair
Universidad Autónoma de Madrid, Spain
Biometrics and Behavior for Improving Human-Computer Interaction with Application to Online Education

Angel D. Sappa
ESPOL Polytechnic University,
Ecuador Computer Vision Center, Spain
Advancements in Cross-Spectral Image Processing: Unlocking New Insights Beyond the Visible Spectrum

Pablo Zegers
Anastasia.AI, Chile
AI in Chile: Opportunities, Developments, and National Challenges

CIARP 24 Participants enjoyed a visit to the TerraNoble Vineyard in Talca, as well as a Social Dinner at the Torobayo Restaurant in Talca.

Authors of IAPR Award-winning papers were invited to submit for publication in a Special Section of *Pattern Recognition Letters*

IAPR Best Paper
Remote-Sensing Based Precipitation Detection using Conditional GAN and Recurrent Neural Networks
Pablo Negri, Alejo Silvarrey, Sergio Gonzalez, Juan Ruiz, & Luciano Vidal

IAPR Best Student Paper
Beta Distribution Approach for Outlier Exposure in Multi-Class Text Classification
Camilo Maldonado, Carlos Valle, & Héctor Allende

Aurora Pons Porrata Award
Alicia Fornes Bisquerra, AERFAI Nomination
Universidad Autónoma de Barcelona, Spain

IAPR Best Paper
Pablo Negri

IAPR Best Student Paper
Camilo Maldonado

Join In!
Research Commentary

To what extent can we use learned models to predict out-of-distribution data? In remote sensing, several papers use models learned over specific datasets to predict in other parts of the world that are not necessarily related to the real data. For example, training data from Europe might be used to make predictions in South America. Even though the data could seem similar, the patterns are not necessarily the same, and the actual prediction cannot be trusted.

Although there was much discussion, currently, there is no leading answer on this topic. Some papers have analyzed the transferability of models. However, given the complexity of deep learning models, this type of analysis is based on strong simplifications of the models and the application of soft-tuning over the new data.

~ Sebastián Moreno
Adolfo Ibañez University, Chile

13th International Conference on Computing and Pattern Recognition

Goals

ICCPR aims to create an effective platform for researchers and technical experts to share recent ideas, innovations and problem-solving techniques in the vast areas of Computing and Pattern Recognition.

Organizers

Advisory Chair: David Zhang, Chinese Univ. of Hong Kong (Shenzhen), China
General Chairs: Umapada Pal, Indian Statistical Institute, India
Qiang Wu, Beijing University of Technology, China
Program Committee Chairs: Yong Yang, Tiangong University, China
João Paulo Papa, São Paulo State University, Brazil
Kenji Suzuki, Tokyo Institute of Technology, Japan
Mounim A. El Yacoubi, Institut Polytechnique de Paris, France

Tianjin, China
Tiangong University

Previous Editions 12th (2023) Qingdao, China
11th (2022) Beijing, China; 10th (2021) Shanghai, China
9th (2020) Xiamen, China; 8th (2019) Beijing, China

8 Countries Represented
China, Austria, Japan, Malaysia, India, Pakistan, Perú, and Thailand

Sponsored by Tiangong University, Supported by Beijing University of Technology, East China Normal University, Shanghai University, Shenzhen University, Xiamen University of Technology, and Wayne State University.
Endorsed by IAPR

Submissions Recieved: **132**
Blind Review by 2-3 Reviewers per Paper
Oral Presentations: **52 (39%)**
Posters **15**

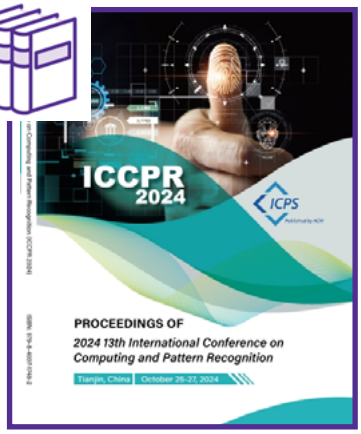
Keynotes

Shengyong Chen, VP of Tianjin University of Technology
Tianjin University of Technology, China. *Intelligent Computing for Smart Healthcare with Medical Images and Signals*

Zhen Wang, IEEE, AAIA, IOP Fellow Northwestern Polytechnical University, China. *On the Advancement of Multi-Agent Games: From Theoretical and Experimental Perspectives*

Xindong Wu, IEEE, AAAS Fellow Hefei University of Technology, China. *Unifying Large Language Models and Knowledge Graphs with a Knowledge Ocean*

Proceedings by ACM



Join In!
Research Commentary

The Challenge of Rapidly Growing Deep Learning Model Sizes and Potential Solutions

The scale of deep learning models has grown exponentially in recent years. While this growth has led to significant performance improvements, it has also introduced several critical challenges, presented and discussed at ICCPR 24.

Key Challenges

High Computational Resource Demand: Training and inference of large models require high-performance GPU/TPU clusters, resulting in prohibitive costs.

Deployment Difficulties: Large models struggle to run efficiently on resource-constrained devices (e.g., smartphones, IoT) and embedded systems.

Low Energy Efficiency: Redundant parameters increase inference latency and power consumption, conflicting with sustainable AI goals.

Solution Pathway

Model Compression & Optimization Pruning: Eliminates redundant weights or neurons while preserving critical parameters (e.g., global magnitude pruning).

Vector Quantization: Compresses floating-point weights into low-bit integers (e.g., 8-bit quantization), reducing storage and computation costs.

Low-Rank Factorization: Decomposes large matrices into smaller factorized matrices, lowering parameter count.

These methods can be applied directly to pre-trained models without expensive fine-tuning, maintaining accuracy (e.g., pruning can reduce model size by 60% with <1% accuracy drop).

Invited Talks

Xin Wang, Tianjin University of Technology, China
A Hybrid Experimental and Machine Learning Study on Collagen Self-Assembly and Degradation In Vitro

Yangli Jia, Liaocheng University, China
Aspect-level Sentiment Analysis Based on XLNET-BiLSTM-ATT

Bo Ren, Nankai University, China
Handling Reflection and Transparency in Neural Rendering

Fan Qi, Tianjin University of Technology, China
Multimodal Emotion Closed-Loop Intelligence

Pascal Lefèvre, Xi'an Jiaotong-Liverpool University, China
A Brief Tour of Deep Learning Model Compression

Yang Gao, Beijing Institute of Technology, China
Self-evolution Learning Paradigm of Large Language Model

Performance Trade-offs & Future Directions

Balancing Key Factors: Trade-offs must be made between model accuracy, compression ratio, and inference speed (e.g., quantization may slightly reduce accuracy but speeds up inference 10x).

Hybrid Approaches: Combining training-free (e.g., pruning) and training-dependent (e.g., knowledge distillation) techniques for further optimization.

Sparse Training: Inducing sparsity during training (e.g., Lottery Ticket Hypothesis).

Adaptive Compression: Dynamically adjusting model architecture based on hardware (e.g., TinyML optimizations).

~ Pascal Lefèvre. Xi'an Jiaotong - Liverpool University, China

CCIW 2024

8th Computational Color Imaging Workshop

September 25–27

Goals

The primary objective of CCIW 2024 was to explore the integration of advanced Artificial Intelligence (AI) algorithms and deep learning models in color imaging, pushing the boundaries of what is possible in this dynamic field. To this extent, we welcomed contributions addressing a wide range of topics, including color image processing, analysis, and applications.

Organizers

Chairs:
Raimondo Schettini, University of Milano-Bicocca, Italy
Shoji Tominaga, Norwegian Univ. of Science and Technology, Norway and Nagano University, Japan
Alain Trémeau, Jean Monnet University, France
Simone Bianco, University of Milano-Bicocca, Italy
Marco Buzzelli, University of Milano-Bicocca, Italy

Click for Complete List of Organizers

Milan, Italy
University of Milano-Bicocca

Previous Editions 7th (2019) Chiba, Japan
6th (2017) Milan, Italy; 5th (2015) Saint Etienne, France
4th (2013) Chiba, Japan; 3rd (2011) Milan, Italy

9 Countries Represented

Italy (7), France (5), Spain (4), Japan (3), Germany (2), Norway (2), UK (1), USA (1), Russia (1)

Click here for a complete list of sponsors and supporting organizations. **Endorsed by IAPR**

Submissions Recieved: **21**
Single-blind Review with at least 3 Reviewers per Paper.
Oral Presentations: **18 + 3 Invited**

Proceedings by Springer LCNS

Join In!
Research Commentary

Color imaging and color processing have traditionally been treated as distinct domains, separate from pattern recognition, image analysis, and video understanding. However, the advent of AI and deep learning has revealed that these fields are deeply interconnected and can mutually enhance each other.

The Role of Color in Modern AI-Based Image Understanding

In conventional approaches, color information was often considered a secondary feature in image recognition tasks, with many methods relying on grayscale representations or simple color descriptors. Today, it is evident that:

Scene-Aware Color Processing Enhances Recognition.
AI-driven methods can leverage information about the scene (e.g., illumination conditions, material reflectance, and perceptual color appearance) to improve object detection, segmentation, and classification.

High-Quality Imaging Benefits AI Models.
Advances in color imaging, such as improved acquisition pipelines, color calibration, and spectral reconstruction, contribute to generating richer data, ultimately improving the accuracy and robustness of AI models.

End-to-End Learning Bridges the Gap.
Deep learning architectures can now jointly optimize color processing and recognition, allowing networks to learn how color should be processed based on the specific task.

Multimodal and Cross-Spectral Approaches are Emerging.
The integration of color imaging with other modalities (e.g., hyperspectral imaging, infrared, or depth sensing) provides AI models with additional information, leading to improved scene understanding and classification.

The Future of Color in AI and Imaging

With these advances, color processing is no longer an independent preprocessing step but an integral part of the entire image understanding pipeline. This paradigm shift calls for further research into:

Physics-based and data-driven hybrid models for color correction and enhancement tailored to AI applications;

Task-specific color transformations optimized for various vision tasks, such as medical imaging, remote sensing, and autonomous systems; and

Integration of color perception models into AI pipelines to align with human visual system characteristics.

Keynotes

Peter Morovic
HP Inc., Spain
Atomic Color:
From Points to Probability Distributions

Miguel Ángel Martínez Domingo
University of Granada, Spain
Spectral Imaging for the Study of Artworks and Historical Documents

Marcello Picollo
Institute of Applied Physics “Nello Carrara,” Italy
VNIR and SWIR Hyperspectral Imaging for the Study of Picasso Paintings

Ján Morovic
HP Inc., Spain
From Gutenberg to Llamas: Print Optimization Through First Principles and AI

Joseph Meehan
Huawei Technologies, France
Computational Smartphone Image Processing - Research to Product

Giuseppe Claudio Guarnera
University of York, UK
Advancements in Practical Facial Skin Reflectance Measurement and Realistic Age Transformation

Initiatives like the Computational Color Imaging Workshop (CCIW) have played a crucial role in advancing research in this domain. As AI continues to revolutionize the way we approach color imaging and processing, events like CCIW will be instrumental in fostering discussions, presenting cutting-edge solutions, and promoting interdisciplinary collaboration between researchers in computer vision, machine learning, color science, and applied imaging.

Future editions of CCIW and similar events should explore how AI-driven color processing can further enhance imaging pipelines, and how new applications in medicine, food recognition, and remote sensing can benefit from advanced color processing techniques.

~Marco Buzzelli, Ph.D.

Tutorials

Tutorial I - ***Advanced Digital Imaging Techniques Applied to Cultural Heritage***
Organized by Miguel Ángel Martínez Domingo, University of Granada, Spain

Tutorial II - *Color Measurements on Paintings: Methodologies and Issues*
Organized by Marcello Picollo, Institute of Applied Physics "Nello Carrara," Italy

Invited Talks

Simone Zini, University of Milano-Bicocca, Italy
Brightening the Dark: Advances in Low-Light Image Enhancement and Night Photography Rendering

Flavio Piccoli, University of Milano-Bicocca, Italy
Personalizing White-Box Image Enhancement: Deep Learning and User-Centric Innovations

Luigi Celona, University of Milano-Bicocca, Italy
Modern Approaches to Explainable Image Aesthetic Assessment

Marco Buzzelli, University of Milano-Bicocca, Italy
Analysis of Automatic White Balance Datasets and Methods

Philippe Colantoni, Jean Monnet University, France
The Impact of Lightness, Color and Geometry of Illumination in Human Pose Estimation for Performing Arts

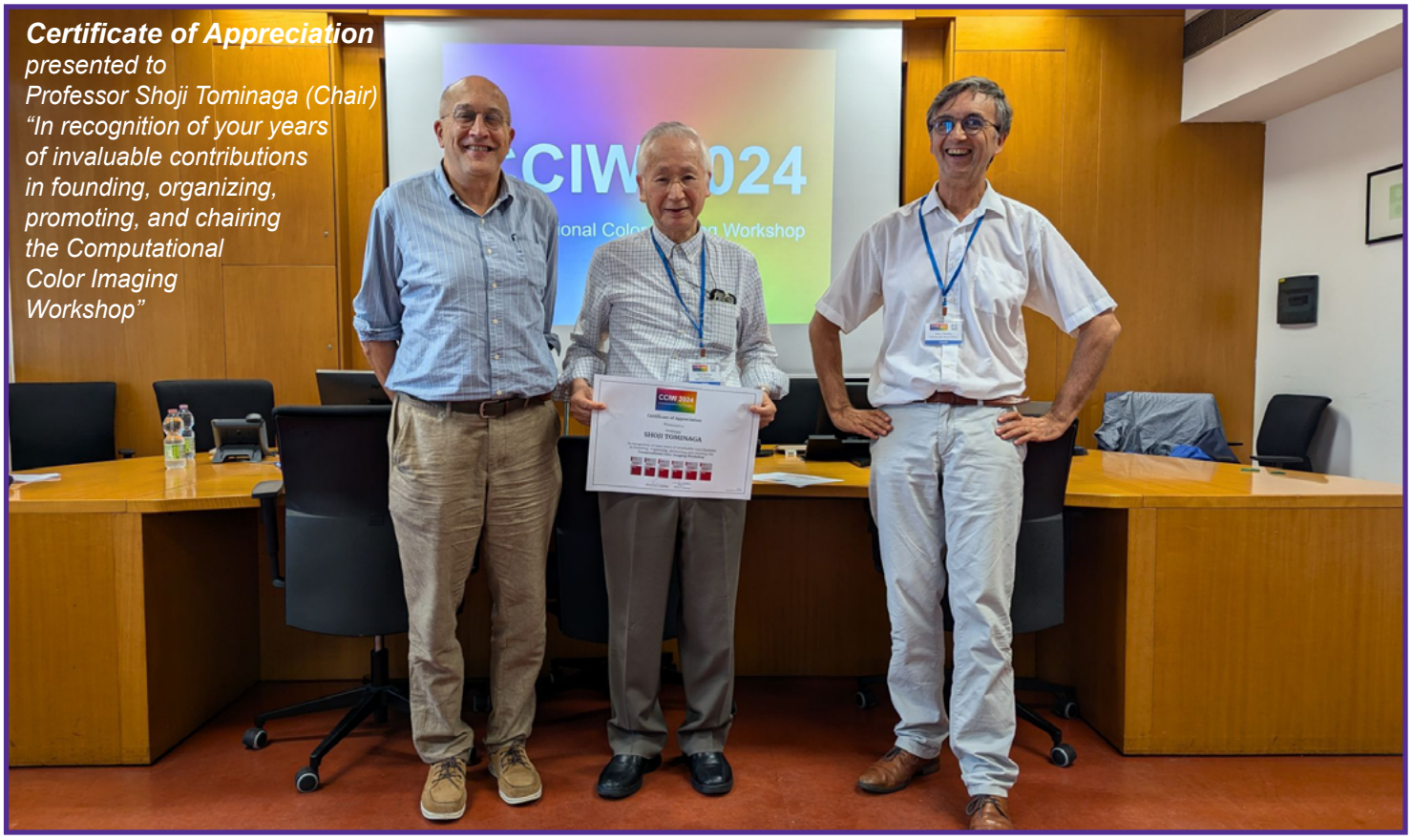
CCIW 2024 participants enjoyed a welcome reception at the Cloisters of Saint Eustorgio Bistrot in Milan.

Awards

Best Student Paper

Stabilization of the Spectral Power Distribution of a Tunable Multichannel LED Lighting System
Sofiane Vernet

Sponsored by the Italian Association for Research in Computer Vision, Pattern Recognition and Machine Learning (CVPL- ex-GIRPR)



Goals

Through DAS 2024, we bring to the fore the transformative power of document analysis technologies and encourage a forward-looking dialogue on their future trajectory, ensuring that the workshop not only reflects the state-of-the-art but also inspires the next wave of technological advancements in document analysis. This workshop is targeted towards researchers, practitioners, and students in the fields of document analysis, pattern recognition, and machine learning, as well as industry professionals interested in the application of these technologies and those interested in demonstrating their own systems as well.

Organizers

Workshop Chairs: Muhammad Zeshan Afzal, DFKI, Germany
Faisal Shafait, National University of Sciences and Technology (NUST), Pakistan
Program Chairs: Giorgos Sfikas, University of West Attica, Greece
George Retsinas, National Technical University of Athens, Greece

Click for Complete List of Organizers

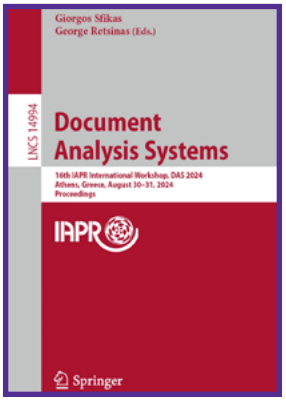
Athens
Greece

Hosted by the University of West Attica and the National Technical University of Athens. **Endorsed and Sponsored by IAPR**; Sponsored by IMDS (International Medias Data Services); Supporting Organizations: NUST and DKFI. Click here for a complete list of sponsors and supporting organizations.

Submissions Recieved: **43**
Single-blind Review
(at least 2 Reviewers per Paper)
Oral Presentations: **10 (23%)**
Posters: **17**

10
Countries Represented

Spain (3),
France (3),
USA (1),
Japan (1),
Germany (1),
Sweden (1)



Proceedings by Springer LCNS

Keynotes

Aurelie Joseph, Yooz Innovation Lab Manager, Yooz (France)
Unveiling the Power of AI: The Critical Role of Explainability and Frugality in Modern Companies

Lukasz Borchmann, Senior Research Scientist at Snowflake, Snowflake (Poland)
From Research to Production and Back Again

Olivier Lessard, Project Manager at IMDS Software, IMDS Software, Montreal (Canada)
Revolutionizing Identity Verification: Deep Learning-based Facial Recognition for Identity Documents

Thomas Breuel, Research Scientist at NVIDIA, NVIDIA (USA)
LLMs, Knowledge, and Document Analysis

Join In!
Research Commentary

The use of AI in legal decision-making has always been a controversial yet fascinating prospect. While courts rely on human expertise, the sheer volume of legal texts and the need for consistency in judgments make AI an attractive tool for assistance. A study presented at DAS 2024 (from the lab of Arooba Masqood) takes a bold step in this direction, introducing a transformer-based system for predicting legal judgments and explaining verdicts. Unlike previous models that struggled with the intricate language of legal documents, this approach leverages domain-specific transformers like Legal-BERT and InLegalBERT to capture the nuances of legal reasoning.

A standout feature of this research is the VerdictVaultPK dataset, a first-of-its-kind collection of Pakistani legal cases focused on rental-property disputes. The dataset allows AI models to learn from past decisions, potentially reducing inconsistencies and bias in judicial verdicts. More importantly, the study doesn't just stop at prediction—it also tackles explainability. The Legal Judgment Explanation Extraction (LJEE) module identifies key legal phrases that influenced the verdict, addressing a critical concern in AI-driven decision-making: transparency.

Yet, challenges persist. The model extracts explanations but doesn't generate them, something that future work could explore. And while transformers like BERT and RoBERTa have made strides in NLP, their token limitations make processing lengthy legal documents difficult. Perhaps the next leap forward will involve Longformers or other architectures designed for handling extensive texts.

So, will AI ever replace judges? Unlikely. But can it assist them in ensuring fairer, more consistent, and faster verdicts? This study makes a compelling case that it can. As the legal field slowly warms up to AI, research like this will be instrumental in defining the boundaries between human and machine intelligence in the pursuit of justice.

~ Arooba Masqood

IMDS Best Paper

Full-page Music Symbols Recognition: State-of-the-art Deep Model Comparison for Handwritten and Printed Music Scores

Ali Yesilkanat, Yann Soullard, Bertrand Coüasnon, and Nathalie Girard

IMDS Best Paper (Runner-up)

Two Experiments for Automatic Scoring of Handwritten Descriptive Answers

Masaki Nakagawa, Hung T. Nguyen, Nghia Thanh Truong, Nam Tuan Ly, Cuong T Nguyen, Haruki Oka, Tsunenori Ishioka, Tomo Asakura, Hiroshi Miyazawa Takahiro Yamamoto, Toshihiko Horie & Fumiko Yasuno

IMDS Best Student Paper

Image-text Matching for Large-scale Book Collections

Artemis Llabrés, Arka Ujjal Dey, Dimosthenis Karatzas, and Ernest Valveny

IMDS Best Student Paper (Runner-up)

Fetch-A-Set: A Large-Scale OCR-Free Benchmark for Historical Document Retrieval

Adrià Molina, Oriol Ramos Terrades & Josep Lladós

The 9th IAPR/IEEE Winter School on Biometrics (WSB 2025) was successfully held from January 12 to 16, 2025, in Shenzhen, China. The theme of this winter school was foundation models and generative artificial intelligence. The school attracted 77 participants from academia and industry across nine countries. It was jointly organized by the Department of Computer Science, Hong Kong Baptist University, the Institute of Automation, Chinese Academy of Sciences and the Department of Computer Science and Engineering, Southern University of Science and Technology. The event was technically co-sponsored by the IAPR TC4 and IEEE Biometrics Council, reinforcing its role as a premier platform for knowledge exchange in biometrics.

The Biometrics Lectures

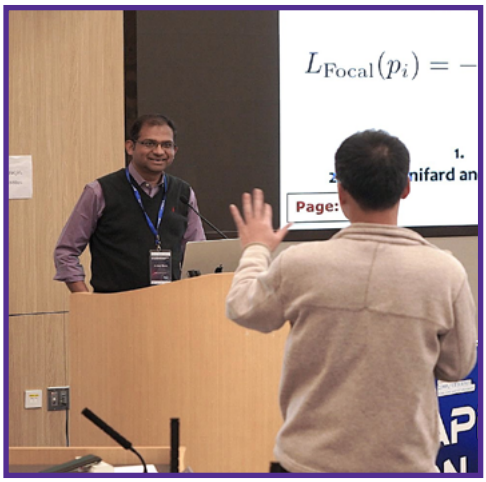
The winter school covered key topics in biometrics through expert talks. In total, 17 lectures (26 hours of lectures) were given by researchers in the field of biometrics. Prof. Tieniu Tan from the Chinese Academy of Sciences and Nanjing University and Prof. Rama Challappa from Johns Hopkins University gave overview lectures and showed the perspectives of the field. Prof. Tieniu Tan discussed how biometrics has improved over the years, what problems still need solving, and where the technology might go next. Prof. Rama Chellappa explained the challenges in biometrics, especially in face and gait.

Several professors gave lectures on the core technologies for different biometric features: Prof. Mark Nixon introduced foundational principles of gait biometrics; Prof. Matteo Ferrara demonstrated step by step how fingerprint recognition works; Prof. Zhenan Sun detailed iris recognition advancements; and Prof. Ajay Kumar introduced contactless palmprint recognition systems for secure authentication.

For the emerging AI technologies: Prof. Xiaoming Liu analyzed biometric systems in the era of foundation models; Prof. Chen Change Loy explored harnessing generative powers for visual content restoration; Prof. Kaiyang Zhou introduced technical roadmaps for vision-language models; Prof. Josef Kittler deconstructed self-supervised learning paradigms for limited-data scenarios; and Prof. Vishal Patel bridged generative AI and large vision-language models for biometrics.

Safety and privacy of biometrics are important issues. Prof. Arun Ross analyzed privacy-preserving biometric frameworks; Prof. Sébastien Marcel shared cutting-edge methods for face presentation attack detection, addressing vulnerabilities in biometric authentication; Prof. Karthik Nandakumar introduced encrypted-domain biometric matching techniques; and Prof. PC Yuen introduced presentation attack detection using remote photoplethysmography for 3D facial mask attack.

For real-world uses, Dr. Shouhong Ding from Tencent showed industrial-scale deployment of palmprint



e-payment systems, highlighting real-world integration challenges, and OpenCV developers, Mr. Wanli Zhong and Mr. Yuantao Feng, taught participants to build face recognition tools using OpenCV and Python. Four teams won prizes for creative solutions.

Multidimensional Knowledge Exchange

The winter school organized three activities to help participants break the ice. A mentoring session was scheduled on the opening day, in which participants were divided into 7 groups. These groups met with Professor-Mentors: Mark Nixon, Chen Change Loy, Sébastien Marcel, Ajay Kumar, Josef Kittler, Kaiyang Zhou, and PC Yuen. Mentors shared career stories, and participants asked questions about research and life and discussed these topics within their groups. One PhD student said, “The mentor gave practical tips that changed how I approach my research.”

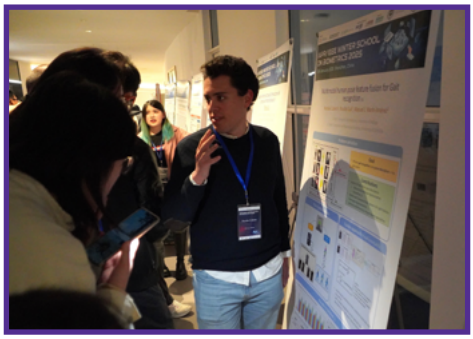
Fourteen students shared their work in a poster session on the second day. Topics included biometrics data from generative AI and privacy protection, among others. This gave participants a chance to discuss their research topics and exchange ideas, and they enjoyed the discussions.

The social program included a cruise ship to go out to sea in the afternoon of the 3rd day. The cruise trip took participants under the Hong Kong-Zhuhai-Macao Bridge, one of the world’s longest sea-crossing bridges. Eight professors, Mark Nixon, Josef Kittler, Xiaoming Liu, Arun Ross, Vishal Patel, Matteo Ferrara, Zhihui Lai and Shiqi Yu, joined the program. As the ship sailed under the bridge, students admired the 55-kilometer structure connecting three cities across the Pearl River Delta. The blue sea and distant city skylines created a perfect backdrop for learning.

Geographic Diversity and Professional Backgrounds:

The winter school attracted 77 participants from 6 countries, including China (69), Somalia (3), India (2), Spain (1), Portugal (1), and Chile (1). Among the participants, 13% of them are doctoral researchers and industry engineers, 73% are PhD and master students, 14% are undergraduate students and others. Six students received IAPR Travel Grants, and two of them report here on their experiences.

~Shiqi Yu



Report on 9th International Winter School on Biometrics

Nicolas Cubero, University of Malaga, Malaga, Spain

I am Nicolas Cubero, a PhD student in computer vision at the University of Malaga in Spain. My research interests include gait recognition and human action recognition in videos.

I am very delighted and grateful for the opportunity to attend the IAPR/IEEE Winter School on Biometrics 2025. The Winter School has provided me with a fantastic opportunity to gain powerful insights into gait recognition, to learn about the current state of research from leading experts, and to enhance my networking and exchange ideas with other professors and students who are also researching this topic.

Additionally, the Winter School allowed me to dive into other biometric areas such as palmprint recognition, iris recognition, and face recognition, where I do not have expertise. I also found very useful the focus on the practical applications of biometrics in real-world scenarios, such as e-payment, but also, the discussions about privacy and security concerns related to biometric faking, biohashing, system pipeline hacking, and biased learning. Lastly, the sessions on generative AI and foundational models were very constructive, equipping me with skills that have potential applications in my research.

I would like to extend my sincere congratulations to the organizers for facilitating social events and mentoring programs that created a supportive atmosphere among professors, leading researchers, and students.

Attending the Winter School has been a highly constructive experience for my career and professional growth, and I am excited to apply the knowledge and insights I gained to my work. I look forward to staying in touch with the contacts I made and exploring potential collaborations in the future.

IAPR/IEEE WINTER SCHOOL ON BIOMETRICS 2025

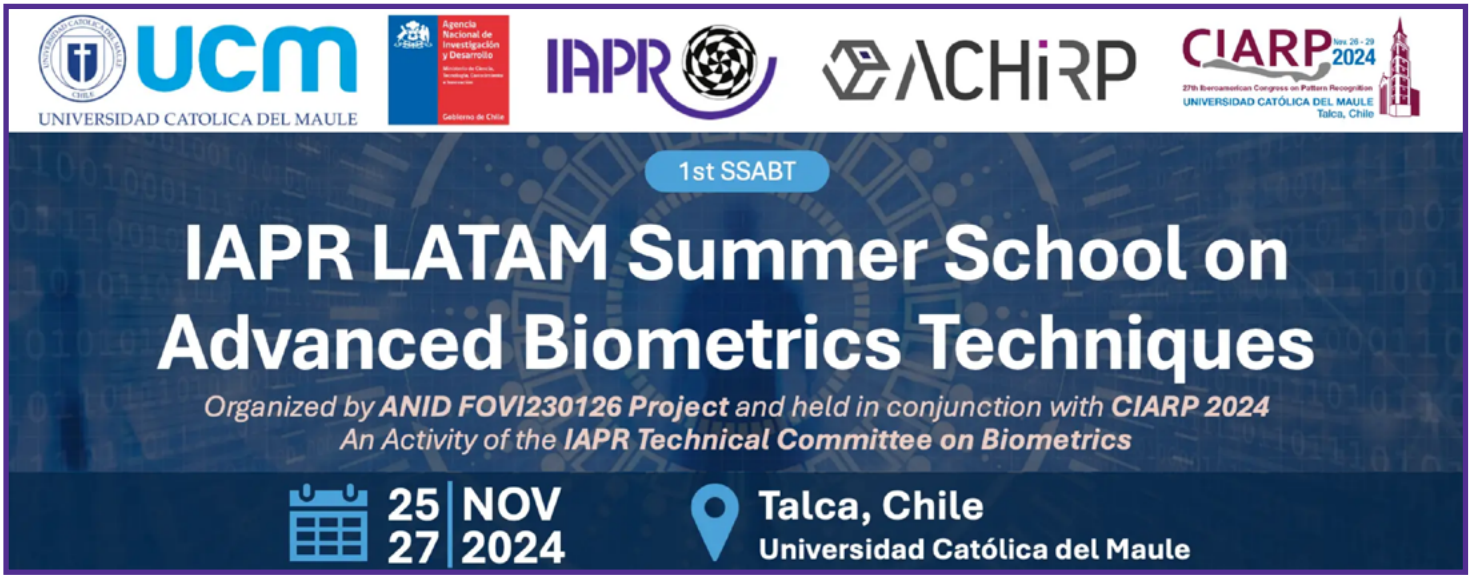
Student Report

Report on 9th International Winter School on Bi
Haibo Xu, Xinjiang University, Chin**a**

The IAPR/IEEE Winter School on Biometrics 2025 ended successfully. I've learned a lot in the five days. I'm very grateful to my supervisor Prof. Kurban Ubul for giving me this opportunity to participate in the event, to Prof. Shiqi Yu from Southern University of Science and Technology for organizing this event, and to all the professors for their sharing and guidance.

To be honest, participating in this all-English academic exchange event was challenging. Seeing excellent students from various universities communicate fluently in English at the conference, I truly felt the gap between myself and them. I still need to keep improving my abilities in the future. The social event during the winter school was really fun. I made many excellent friends and even talked with international friends. Hahaha, I was also brave enough to have a simple chat with professors. All the professors are not only very capable but also very kind. The sea cruise was also very exciting. Seeing the great Hong Kong-Zhaui-Macao Bridge, I couldn't help but admire the strength of technology.

After holding back my courage for four days, I finally summoned up the courage to ask a question during the Q&A session on the last day. Unexpectedly, I was awarded a certificate. And most importantly, it was Prof. Tieniu Tan who presented the award to me. It was really an honor. I got my first photo with a Chinese academician, Prof. Tan. This courage really paid off. With the blessing of the academician, I went to the mall and bought two lottery tickets tonight and won a grand prize of 700 yuan. It was the first time I won such a big prize in my life. I'm so lucky. Today was really a day full of surprises. These five days of experience were really lucky and happy. Once again, I thank my supervisor for giving me this precious opportunity. It was really a great experience.



The 1st IAPR LATAM Summer School on Advanced Biometric Techniques (SSABT 2024) was held on November 25-27, 2024, at the Universidad Católica del Maule, Talca, Chile, as a hybrid event, in conjunction with CIARP2024 and organized by ANID FOVI230126 Project and BRECS.NET.

SSABT aimed to provide up-to-date skills to participating students, professionals, academics, and researchers from the Latin American region in technical, regulatory, and ethical aspects of advanced biometric systems, along with a unique opportunity to connect with senior scientists and promote researchers' collaboration networks. This is the first instance of this type of high-level training in our continent, joining the existing ones in Sassari, Italy and Shenzen, China.

We appreciate the endorsement of the International Association of Pattern Recognition (IAPR) as part of the activities of TC4 Biometrics.

The SSABT Program comprised three distinguished keynote lectures, 10 keynote lectures, and two mentoring sessions, for a total of 15 sessions led by experts in their fields (see box, next page). Twenty-seven researchers and 23 students participated, representing six different countries (number of students, number of researchers): Mexico (3,1), Brazil (1,0), Colombia (2,7), Argentina (3,2), Chile (14,16), United Kingdom (0,1).

CIAPR 2024 and LATAM Summer School attendees join for a group photo.

A Doctoral Symposium was organized as part of the school, where the students presented their doctoral/master investigations as a poster presentation. This was a unique opportunity for students to present their ongoing work and interact with other students and experienced researchers. All posters were included in a “Book of Abstracts” to promote knowledge sharing. Nine students (7 Phd and 2 MSc) presented their posters.

The students’ presentations showed and helped further develop their deep understanding of their research areas, ability to answer questions, and overall presentation skills.

Lecturers/Mentors	Topics
Distinguished Keynote Lectures	
Arun Ross Michigan State University, USA	Introduction to Biometrics and Iris Recognition
Shiqi Yu Southern University of Science and Technology, China	Gait Recognition and Analysis: Progress andChallenges
Julián Fierrez Universidad Autónoma de Madrid, Spain	Biometrics and Behavior for Improving Human-Computer Interaction with Application to Online Education
Keynote Lectures	
María E. Buemi Universidad de Buenos Aires, Argentina	Object Hand Detection Methods in Egocentric Videos
Gaurav Jaswal IIT Mandi, India	Forehead Crease Biometrics
Francisco M. Castro Universidad de Málaga, Spain	Biometric and Biomedical Data Analysis
Domingo Mery Pontificia Universidad Católica de Chile, Chile	Navigating the Complexities of Face Recognition: From Detection to Ethics
José Portillo Instituto Politécnico Nacional, Mexico	Semantic Segmentation of Silhouettes for Person Identification
Sergio Velastin Universidad Carlos III de Madrid, Spain/ Queen Mary University of London, UK	Applications of Object Detection andClassification
Anoop Namboodiri IIIT Hyderabad, India	Towards Billion-scale Search for Biometric De-duplication
Massimo Tistarelli Università degli Studi di Sassari, Italy	Human Face Recognition: Learning from Biological Deep Networks
Manuel J. Marin Universidad de Córdoba, Spain	Multimodal Gait Recognition
Juan Tapia Hochschule Darmstadt, Germany	Fitness for Duty Using NIR Iris Images
Mentoring Sessions	
Omar Olivares Emergent Mind, USA	AI Research Assistant for Computer Scientists
Fernando Venegas Grupo Zenit, Chile	IT Entrepreneurship and Technology-based Startups

The IAPR’s financial support fostered participation from a diverse and talented pool of students, enriching the learning experience for all attendees. IAPR scholarships also encouraged students to present their research, contributing to the Doctoral Symposium’s success.

In summary, we are pleased to report several positive outcomes: 1) scholarship programs significantly increased accessibility and diversity, 2) the inclusion of a Doctoral Symposium fostered a valuable research-sharing environment, 3) top-level lectures and practical sessions enhanced learning outcomes, and 4) social activities contributed to networking and a positive overall experience.

In the future, we plan to further develop the following aspects of the Biometrics School: 1) more consistent evaluation and feedback mechanisms, 2) aiming for the best balance between theoretical depth and practical application, 3) continuing efforts to expand international participation and diversity, and 4) continuing and expanding hands-on sessions and real-world applications to enhance learning and skill development.

The 2nd LATAM Summer School on Advanced Biometric Techniques is planned for Cancun, Mexico, from November 3 – 7, 2025.

~ Ruber Hernández García

1st IAPR LATAM Summer School Experience Report

Mateo Mejía Herrera

As a grant recipient, attending the 1st IAPR LATAM Summer School was an invaluable experience that significantly enriched my knowledge and professional network in the field of Pattern Recognition.

One of the most impactful aspects of the program was the opportunity to establish meaningful connections with researchers and students from diverse cultural and academic backgrounds. This network fosters collaboration and the development of innovative strategies to address challenges in pattern recognition, particularly in my area of interest: biometrics.

The school introduced me to groundbreaking applications of artificial intelligence in pattern recognition across a wide range of domains, including historical analysis, psychology, entertainment, health, and biometrics. Understanding the societal impact of these evolving models highlighted the importance of advancing research to benefit communities globally.

A particularly valuable insight was learning about techniques to optimize biometric systems for large-scale applications, such as reducing the amount of required data and improving model efficiency. These approaches are crucial for achieving faster and more reliable individual identification in country-scale systems.

Every session brought unique perspectives and practical examples, sparking meaningful discussions on challenges and solutions in diverse applications. These presentations provided a comprehensive understanding of tested models and potential solutions, equipping me with the tools to address complex problems in my research.

My MSc thesis focused on hand vein biometric recognition, and this experience deepened my understanding of the field. It also reinforced the importance of building networks that encourage collaboration and knowledge exchange. The cultural and intellectual diversity of the participants broadened my perspective and inspired new ideas for advancing biometric recognition systems.

I want to extend my sincere gratitude to IAPR for awarding me the scholarship that made my participation possible and to Professor Ruber Hernández for managing the event. Their support not only facilitated my attendance but also allowed me to benefit fully from this transformative experience. The 1st IAPR LATAM Summer School was an essential milestone in my academic journey; it enhanced my expertise, expanded my network, and offered fresh perspectives on leveraging AI in pattern recognition. This experience will undoubtedly shape my future research endeavors and contribute to meaningful advancements in biometrics and related fields.

ICPR 2024 INDIA

27TH International Conference on Pattern Recognition

December 01-05, 2024, Kolkata, India

Goals

ICPR is the flagship conference of the International Association for Pattern Recognition and the premier conference in Pattern Recognition, covering Computer Vision, Machine Learning, Image, Speech, Sensor Pattern Processing, and many other related areas of research.

Organizers

General Chairs: Umapada Pal, Indian Statistical Institute, Kolkata, India
Josef Kittler, University of Surrey, UK
Anil Jain, Michigan State University, USA

Program Chairs: Rama Chellappa, Johns Hopkins University, USA
Cheng-Lin Liu, Institute of Automation, CAS, China
Apostolos Antonacopoulos, University of Salford, UK
Subhasis Chaudhuri, Indian Institute of Technology, Bombay, India

Click for Complete List of Organizers

Kolkata, India

Biswa Bangla
Convention Center

Sponsored by IAPR
Main Organizer: Machine Intelligence and Data Analytics Society (MIDA)
Technical Partners: Indian Statistical Institute Kolkata and Indian Unit for Pattern Recognition and Artificial Intelligence (IUPRAI)

Submissions

ICPR 2024 followed a two-round paper submission format with a rebuttal option in the second round.

Papers Received: **2135**
(1501 in Round 1 and 634 in Round 2)
Papers were reviewed in a single-blind process with an average of 2.84 reviewers per paper.

Papers Accepted for Main Conference: **945 (44.26%)**
Accepted for Oral Presentation: **188** (8.81% of all submissions)
Accepted for Poster Presentation: **757** (35.46% of all submissions)
plus 12 Competition Papers (Posters)

Previous Editions: 50 years of ICPR

26th ICPR 2022 - Montréal, Québec, Canada
25th ICPR 2020 - Milano, Italy
24th ICPR 2018 - Beijing, China
23rd ICPR 2016 - Cancun, Mexico
22nd ICPR 2014 - Stockholm, Sweden
21st ICPR 2012 - Tsukuba, Japan
20th ICPR 2010 - Istanbul, Turkey
19th ICPR 2008 - Tampa, Florida, USA
18th ICPR 2006 - Hong Kong, China
17th ICPR 2004 - Cambridge, England, UK
16th ICPR 2002 - Quebec City, Canada
15th ICPR 2000 - Barcelona, Spain
14th ICPR 1998 - Brisbane, Australia
13th ICPR 1996 - Vienna, Austria
12th ICPR 1994 - Jerusalem, Israel
11th ICPR 1992-The Hague, The Netherlands
Tenth ICPR 1990 - Atlantic City, USA
Ninth ICPR 1988 - Rome, Italy
Eighth ICPR 1986 - Paris, France
Seventh ICPR 1984 - Montreal, Canada
Sixth ICPR 1982 - Munich, Germany
Fifth ICPR 1980 - Miami, USA
Fourth IJCPR 1978 - Kyoto, Japan
Third IJCPR 1976 - Coronado, USA
Second IJCPR 1974 - Copenhagen, Denmark
First IJCPR 1973 - Washington DC, USA

Research works from **28** different countries were selected for oral presentation. More than **40** countries were represented with poster presentations.

[Join In! ICPR Research Commentary]

Proceedings by Springer [LCNS]

ICPR 2024 Program Summary

Click on any icon or link below for details:

6 Keynotes
Including
3 IAPR Prize Winners

3 Invited Talks
In Celebration of
50 Years of ICPR

22 Workshops

15 Competitions

7 Tutorials

Doctoral Consortium

3 Social and Cultural Progams

Women at ICPR (W4PR) Panel and Workshop
(see also: [EDI Column])

Celebrating 50 Years of IAPR/ICPR

Awards

[3 Outstanding Scholarship Awards]
[21 IAPR Fellow Awards]
[7 Best Paper Awards (BIRPA and by track)]
[7 Best Student Paper Awards (Zamperoni Award and by track)]
[3 Outstanding TC Awards] & [7 Certificates of Appreciation]

Keynotes from Award Winners

The King-Sun Fu Prize is the highest honor bestowed by IAPR. The award was established to honor the memory of Professor Fu, instrumental in founding IAPR and its first President, who is widely recognized for his extensive and pioneering contributions to the fields of pattern recognition and machine intelligence.

The ICPR 2024 King-Sun Fu Prize was awarded to
Tin Kam Ho (IBM Research, USA)
For pioneering contributions to multi-classifier systems, random decision forests, and data complexity analysis

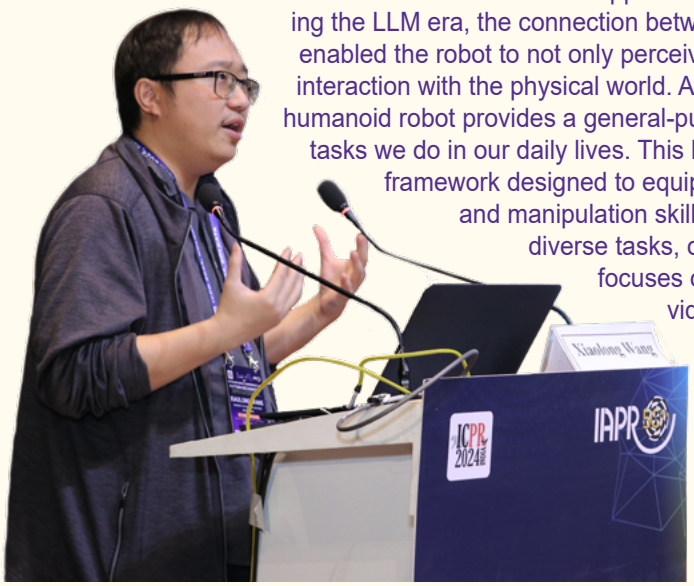
Learnability Studies in Pattern Recognition

Limits in supervised learning are observed in many practical applications. Data complexity analysis aims at providing a scientific basis to describe datasets used in supervised learning, and to relate intrinsic data characteristics to the behavior of learners. Improved understanding of the relationship between data and learners can provide guidance on setting up a learning problem, transforming the data, and selecting a solution. This keynote reviewed the development of studies in this area, and described newer applications of data complexity analysis to deep learning and generative artificial intelligence.

The J. K. Aggarwal Prize is given to a young scientist who has brought substantial contributions to a field that is relevant to the IAPR Community and whose research work has had a major impact on the field. Professor Aggarwal is widely recognized for his extensive contributions to the field of pattern recognition and for his many contributions to IAPR's activities

The 2024 J. K. Aggarwal Prize was awarded to **Xiaolong Wang (UC San Diego, USA)**
For groundbreaking contributions to advancing visual representation learning, utilizing self-supervised and attention-based models to establish fundamental frameworks for creating versatile, general-purpose pattern recognition systems

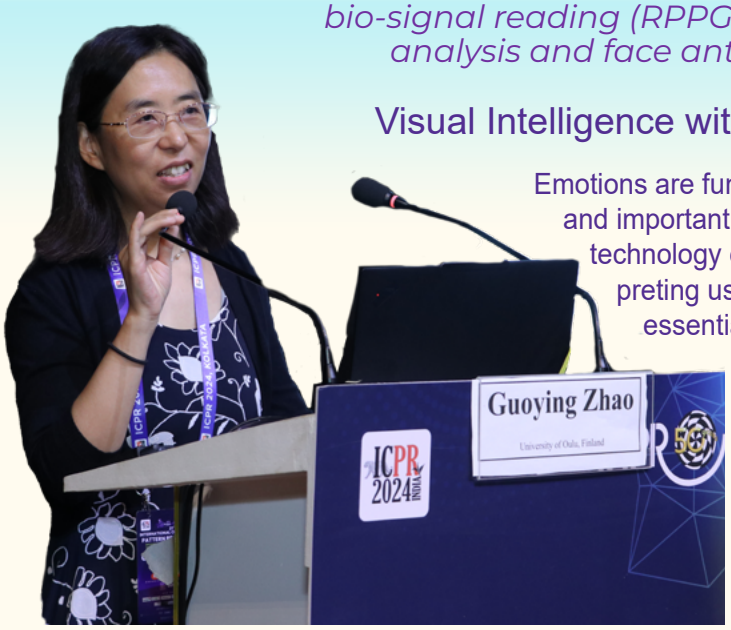
From Perception to Embodied AI: Modeling Humans for Humanoid Robots



The vast development in visual perception has enabled significant advancement and countless applications in robotic systems. Entering the LLM era, the connection between language and vision has enabled the robot to not only perceive but also reason and plan its interaction with the physical world. Among all the robot platforms, the humanoid robot provides a general-purpose platform to conduct diverse tasks we do in our daily lives. This keynote presented a 2-level learning framework designed to equip humanoid robots with robust mobility and manipulation skills, enabling them to generalize across diverse tasks, objects, and environments. The first level focuses on training Vision-Language-Action (VLA) models with human video data for both navigation and manipulation. These models can predict "mid-level" actions which predict precise movements or trajectories for the human body and hands, conditioned on language instructions. The second level involves developing low-level robot manipulation skills through teleoperation, and low-level humanoid whole-body control skills via motion imitation and Sim2Real. By combining human VLA with low-level robot skills, this framework offers a scalable pathway toward realizing general purpose humanoid robots.

The Maria Petrou Prize honors the memory of Professor Maria Petrou as a scientist of the first rank and particularly her role as a pioneer for women researchers. The prize is given to a living woman scientist/engineer who has made substantial contributions to the field of Pattern Recognition and whose activities may be regarded as a model to both established and aspiring researchers.

The 2024 Maria Petrou Prize was awarded to
Guoying Zhao (University of Oulu, Finland)
For contributions to video analysis for facial micro-behavior recognition and remote bio-signal reading (RPPG) for heart rate analysis and face anti-spoofing



Visual Intelligence with Emotion Perception

Emotions are fundamental to human interaction and important in advancing Artificial Intelligence. As technology evolves, emotionally intelligent systems capable of interpreting user emotions and responding appropriately are becoming essential, with potential applications spanning diverse domains including human-robot interaction, emotional chatbots, healthcare, customer experience analysis, and security. This keynote focused on the research of visual intelligence in emotion perception, presenting advancements in the analysis of facial micro-expressions and body micro-gestures, and non-contact heart rate estimation from videos, with insights into future challenges and opportunities in developing emotionally perceptive AI systems.

More Keynote Speakers

Shuicheng Yan (Skywork AI, Singapore)

Foundations of Foundation Models

In this presentation, I divided the research on foundation models into three aspects,corresponding to three types of errors: approximation error, estimation error, and optimization error. For approximation error, I shared two recent advancements in model architecture, MoE++ and MoH. For optimization error, I presented our new optimizer called Adan and discussed how we optimize individual layers based on samples with varying levels of difficulty. Additionally, I introduced two of our new products, SkyMusic and SkyReels.

More Keynote Speakers

Venu Govindaraju

University at Buffalo, State University of New York, Buffalo, NY, USA

The Evolution of AI in Handwriting Recognition: Insights and Innovations

This keynote presented an overview of nearly three decades of innovation in handwriting recognition – providing insights into the evolution of research in this field and its future directions. Too, we explored how the approach to AI has been transformed from human-centric engineering to contemporary machine learning paradigms, driven by the confluence of supercomputing power, the ubiquity of cameras capturing document images, and the plentiful availability of data. We revisited our seminal work in handwriting recognition, which was integral to the first handwritten address interpretation system used by the U.S. Postal Service, a landmark achievement in the practical application of AI. Our journey through the handwriting recognition landscape highlighted the transition from lexicon-based to lexicon-free approaches, and from heuristic-driven techniques to the principled methodologies we pioneered. Initially, our focus had been on practical applications such as automated processing of postal addresses, bank checks, and medical forms. These applications have evolved to target new challenges and opportunities, such as leveraging handwriting recognition to aid in the diagnosis and support of dyslexia and Parkinson's disease, and exploring how handwriting can stimulate cognitive development in children. For example, a learning science question of interest is whether speech communication impediments among children can be overcome more effectively when exercises of vocal repetitions with corrections under the guidance of a speech pathologist are supplemented with simultaneous handwriting of the words. The talk concluded with a forward-looking perspective on the digital humanities space and innovative ideas, such as the potential applications of whiteboard recognition technologies in flipped classroom settings.

Timothy Hospedales

University of Edinburgh, Edinburgh, UK,
and EU Regional Director of Samsung AI

On the Importance and Difficulty of Evaluating AI

Exciting new AI announcements are occurring almost daily. But sometimes it's hard to know if progress is as impressive as claimed; and it is certainly hard to know if advertised capabilities are robust enough to be relied upon. In this talk I discussed a variety of cases I have encountered where evaluation challenges meant that the reality was not as promising as initially advertised. In the process, I reflected on why this happens so often, what we can do better going forward as a community to make sure we better assess our own progress, and how we can know when AI can be relied upon.

We are in the midst of celebrating IAPR's 50th Anniversary, with the kickoff taking place at ICPR 2024 in Kolkata and further activities continuing through ICPR 2026 in Lyon and ICPR 2028 in Sydney. Dan Lopresti, Past President of IAPR (2022-2024) and first Chair of the Ad Hoc 50th Anniversary Committee, formally began these celebrations at the opening session in Kolkata with the presentation of an interesting and informative short video highlighting the early years of IAPR and our growth since then. The video is now available at iapr.org/50th. Please check out the IAPR website for further details on upcoming celebrations, and consider contributing your ideas and historical documents and images.

Invited Talks: Special 50-Year Celebration

On Monday afternoon, Dec 2, three esteemed researchers, all well-known for their leadership contributions at IAPR over the years, presented talks at a special session celebrating 50 years of IAPR and ICPR.

Arjan Kuijper, now Past President of IAPR, extended gratitude to three 50th Anniversary Special Session Invited Speakers (left to right)

Ingela Nyström, IAPR President 2014-2016,
Professor at Uppsala University, Sweden

Anil Jain
University Distinguished Professor and Douglas E. Zongker Endowed Professor at Michigan State University, USA

Josef Kittler, IAPR President 1994-1996
Distinguished Professor, University of Surrey, UK

Doctoral Consortium

The inaugural edition of the ICPR Doctoral Consortium took place at ICPR 2024 in Kolkata and was a tremendous success. Seventeen students participated in an engaging program which included poster presentations and interactions with senior mentors. The Doctoral Consortium also provided the students with an excellent networking opportunity and introduced them to the benefits of membership in the ICPR community.

Join In! ICPR 2024 Research Commentary

ICPR 2024 included many fascinating discussions about research progress in pattern recognition and related fields. We will limit ourselves to sharing just a few here, and refer readers to our proceedings, published by Springer LNCS, for more details.

In one of the sessions, the speaker, Dr. Tin Kam Ho, emphasized the importance of learnability studies in addressing pattern recognition problems. The discussion highlighted the inherent limitations of supervised learning algorithms, particularly in relation to the complexity of class boundaries. As the complexity of these boundaries increases, the effectiveness of supervised learning models diminishes, underscoring the need for a deeper understanding of dataset complexity. A key takeaway from the discussion was that measuring dataset complexity could be instrumental in designing and evaluating deep learning models. A reliable complexity measure would provide insights into the challenges associated with learning patterns in data, ultimately aiding in the development of more efficient and accurate models. However, quantifying dataset complexity remains a significant challenge due to the uncertainty associated with estimating complexity. The inherent variability and ambiguity in defining complexity make it difficult to establish a universally applicable metric. As a future research direction, the community should focus on thoroughly exploring the factors that influence data complexity in deep networks. A more comprehensive understanding of these factors would enable researchers to develop robust and reliable methods for estimating dataset complexity. Such advancements would contribute to the creation of more adaptable and efficient deep learning models capable of handling complex pattern recognition tasks with greater precision.

In another session, Dr.Timothy Hospedales discussed the importance and difficulty of evaluating AI. A faithful understanding of evaluation protocols is required to analyze and mitigate the training-deployment distribution shift, which is usually pervasive. Currently, researchers use unsupervised domain adaptation (DA) or specifically designed optimization algorithms for domain generalization (DG) to minimize performance drops due to covariate shift. However, these techniques often fail. DG and DA methods are hard to apply reliably due to the inherent bias in AI models, which stems from faulty evaluation protocols. The solution to this challenge is fair learning. Fair learning aims to reduce bias in AI models by ensuring that evaluation protocols account for diverse and representative data distributions. It seeks to create models that perform equitably across different subgroups, thereby improving robustness and reliability. As a future direction, researchers should focus on model selection techniques that preserve fairness. By integrating fairness-aware evaluation criteria, the AI community can develop more effective and unbiased models, ultimately leading to more trustworthy and generalizable AI systems.

In another session, Prof. Venu Govindaraju analyzed the evolution of AI from the perspective of human language communication. The discussion covered the role of the Turing test and beyond in assessing the naturalism of AI models. However, a key distinction between human perception and machine perception was highlighted—human perception is more environment-inspired. This fundamental difference affects how humans and machine learning models interpret concepts such as proximity, connection, and continuity. It was discussed that as the gap between human and machine perception narrows, AI can be used for more social tasks. One promising application discussed was the use of AI in specialized learning. Specifically, AI solutions can be designed to assist individual learning needs, making education more adaptive and personalized. A significant portion of the discussion focused on how AI could assist in the learning process of children with special needs, offering much needed educational support to enhance their learning experiences.

~ Umpada Pal

ICPR 2024 Workshops

Links connect to full reports in this issue

✓ = IAPR sponsored, ✓ = IAPR endorsed

A2I: Affective Artificial Intelligence - Methods and Applications

ABC with ML: Advancing Brain-Computer Interfaces with Machine Learning

✓ **AI4D:** AI for De-escalaton: Enhancing Human Security, Equality & Dignity

✓ AIHA: Artificial Intelligence for Healthcare Applications

✓ **AISIA:** Artificial Intelligence for Surgical Image Analysis (cancelled)

✓ **CVUAI:** Workshop on Computer Vision for Analysis of Underwater Imagery (postponed)

✓ CWE: Challenges in Wireless Capsule Endoscopy

FAIRBO: Fairness in Biometric Systems

FBE: Facial and Body Expressions

G2SP-CV: Graph Learning and Graph Signal Processing Algorithms in Computer Vision

✓ IMTA-IX: Image Mining, Theory and Applications

✓ **IMUE:** Intelligent Mobility in Unstructured Environments

MADiMa: Multimedia Assisted Dietary Management

✓ MCMI: Multi- and Cross-Modal Information for Enhanced Pattern Recognition

✓ **MMforWILD:** MultiMedia FORensics in the WILD

✓ **MMVPR:** Multi-Modal Visual Pattern Recognition

✓ MPRSS: Multimodal Pattern Recognition for Social Signal Processing in Human-Computer Interaction

✓ PRHA: Pattern Recognition in Healthcare Analytics

✓ PRRS: Pattern Recognition in Remote Sensing

✓ RRPR: Reproducible Research in Pattern Recognition

SPRCV: Sustainable Pattern Recognition and Computer Vision Developments Balancing Innovation and Environmental Responsibility

VAIB: Visual Observation and Analysis of Vertebrate and Insect Behavior

WICV: Infrared Computer Vision

✓ **XAIE:** Explainable and Ethical AI

ICPR 2024 Competitions

Winners as appearing on websites, where available

AgVision Beyond Visible Spectrum: AI for Agriculture
Winners: Task 1: NCKU_ACVLAB
Task 2: VietNamese

CIAS Intracranial Aneurysm Segmentation

CSI Multilingual Claim-Span Identification

DAGECC Domain Adaptation and GEneralization for Character Classification

EcoVision Unleashing AI for Marine Ecology Insights

GBMS Segmentation of Pre-Operative and Post-Operative Glioblastoma from MRI

LI Leaf-Inspect
Winners: Leaf Counting: KSK
Leat Instance Segmentation: Ingenious

LimitIRSTD Resource-Limited Infrared Small Target Detection Challenge
Winners: Track 1: Chainey; Track 2: Chainey

MMER Multi-line Mathematical Expressions Recognition
Winner: 360ailab

MSLesSeg Multiple Sclerosis Lesion Segmentation
Winner: MadSeg (University of Wisconsin-Madison)

RIP Rider Intention Prediction Competition
Winner: Cisco

SatVideoDT Moving Object Detection and Tracking in Satellite Videos
Winners: Track 1: CSU-EIC (Chinese Academy of Sciences)
Track 2: CSU-EIC (Chinese Academy of Sciences)

SSDSinUTAWC Unstructured Traffic and Adverse Weather Conditions Segmentation
Winner:kshrshit

VISTAC VISual Tracking in Adverse Conditions
Winner: Amaterasu

WIRIndic Word Image Recognition from Indic Scene Images
Winner: MVu

ICPR 2024 Tutorials and Presenters

Behaviour Sensing from Audio-Visual Cues
Gauri Deshpande (Tata Consultancy Services)
Björn Schuller (Technical Univ of Munich (TUM), Germany)

Active Learning for Pattern Recognition Applications
Shayok Chakraborty (Florida State University)

Building Highly Efficient Computer Vision Models: Development of Deployment with Ease
Arun Chauhan (Graphic Era University Dehradun)
Deepak K. Gupta (IIT ISM Dhanbad)
Arnav Chavhan (Nyun AI)

DL-Based Generative Models for Sensor Data Synthesis: Methods, Applications and Need of Physics Guidance
Soma Bandyopadhyay
(Tata Consultancy Services, Kolkata, India)
Anish Datta (Tata Consultancy Services, Kolkata, India)
Subhasri Chatterjee (Tata Consultancy Services, Kolkata, India)

Pattern Recognition and AI in Art
Lawrence O'Gorman (Nokia Bell Labs, Murray Hill, USA)

Visual Turing Test in Visual Object Tracking: A New Vision Intelligence Evaluation Technique based on Human-Machine Comparison
Xin Zhao (University of Science and Technology Beijing)
Shiyu Hu (Chinese Academy of Sciences)

Handwritten Mathematical Expression Recognition in the Last Decade
Thanh-Nghia Truong
(Tokyo University of Agriculture and Tech, Tokyo, Japan)
Cuong Tuan Nguyen
(Vietnamese-German University, Binh Duong, Vietnam)
Nam Tuan Ly
(Tokyo Univ of Agriculture and Technology, Tokyo, Japan)
Harold Mouchère (University of Nantes, Nantes, France)
Masaki Nakagawa
(Tokyo Univ of Agriculture and Technology, Tokyo, Japan)

Best Paper Awards

Best Industry Related Paper (BIRPA)

Harmonized Spatial and Spectral Learning for Generalized Medical Image Segmentation
by Vandan Gorade, Sparsh Mittal, Debesh Jha, Rekha Singhal, and Ulas Bagci

Best Scientific Paper Awards

Track	
1	*A Novel Loss for Contrastive Deep Supervision* by Zhengming Ye, Yang Hua, Wenjie Zhang, Xiaoning Song, Zhenhua Feng, & Xiao-Jun Wu
2	*Environment-Independent Fusion for Robust Object Detection in Adverse Environments* by WenLong Zhong, Yunfei Zhang, & Si Wu
3	*Fast Orthogonal Matching Pursuit through Successive Regression* by Huiyuan Yu, Jia He, & Maggie Cheng
4	*Parallel Attention Based Network for Human Activity Recognition Using Wearable Devices* by Chenyang Xu, Feiyi Fan, Guanzhou Ke, Changru Guo, Qingyu Wu, & Jianfei Shen
5	*Arbitrary-Shaped Scene Text Recognition with Deformable Ensemble Attention* by Shuo Xu, Zeming Zhuang, Mingjun Li, & Feng Su
6	*Generating Counterfactual Trajectories with Latent Diffusion Models for Concept Discovery* by Payal Varshney, Adriano Lucieri, Christoph Balada, Andreas Dengel, & Sheraz Ahmed

Best Student Papers

Piero Zamperoni Award

AllWeather-Net: Unified Image Enhancement for Autonomous Driving Under Adverse Weather and Low-Light Conditions
by Chenghao Qian, Mahdi Rezaei, Saeed Anwar, Wenjing Li, Tanveer Hussain, Mohsen Azarmi, and Wei Wang

Best Student Paper Awards

Track	
1	*Functional Tensor Decompositions for Physics-Informed Neural Networks,* by Sai Karthikeya Vemuri, Tim Büchner, Julia Niebling, & Joachim Denzler
2	*RGB-T Object Detection via Group Shuffled Multi-receptive Attention and Multi-modal Supervision,* by Jinzhong Wang, Xuetao Tian, Shun Dai, Tao Zhuo, Haorui Zeng, Hongjuan Liu, Jiaqi Liu, Xiuwei Zhang, & Yanning Zhang
3	*Generating High-quality Symbolic Music Using Fine-grained Discriminators,* by Zhedong Zhang, Liang Li, Jiehua zhang, Zhenghui HU, Hongkui Wang, Chenggang Yan, Jian Yang , & Yuankai Qi
4	*Visible-Infrared Person Search: A Novel Benchmark and Solution, by* Hongxu Chen, Jianghao Xiong, YuHeng Huang, Xiaohua Xie, & Jian-Huang Lai
5	*Offline Handwritten Signature Verification Using a Stream-Based Approach,* by Kecia G. De Moura: Rafael M. O. Cruz, & Robert Sabourin
6	*A Cascading Approach with Vision Transformers for Age-Related Macular Degeneration Diagnosis and Explainability,* by Ainhoa Osa-Sanchez, Hossam Magdy Balaha, Mahmoud Ali, Mostafa Abdelrahim, Mohmaed Khudri, Begonya Garcia-Zapirain, & Ayman El-Baz

Technical Committee Awards

Outstanding Technical Committees:

TC4 Biometrics

For excellence in educational activities

Leadership (2022-2024) Chair: Julian Fierrez, Vice Chair: Shiqi Yu

TC10 Graphics Recognition and TC11 Reading Systems

For excellence and impact of organized events

TC10 Leadership (2022-2024)
Chair: Jean-Christophe Burie
Vice-Chair: KC Santosh

TC11 Leadership: (2022-2024)
Chair: Andreas Fischer;
Vice-Chair: Mickael Coustaty

Special Achievement

TC2 Structural & Syntactical Pattern Recognition

For establishing the TC2 Summer School on Deep Learning on Graphs

Leadership (2022-2024) Chair: Andrea Torsello, Vice Chair: Bai Xiao

Certificates of Appreciation

Lale Akarun
For outstanding leadership service to IAPR, in particular, working to enhance IAPR's Technical Committee activities and to further IAPR's Equality, Diversity and Inclusion initiatives

Carolyn Buckley
For creative leadership as the IAPR Newsletter Layout Editor and for outstanding contributions to IAPR's 50th Anniversary materials

Anna Esposito
For outstanding contributions to IAPR as Chair of the 2022-2024 Conferences & Meetings Committee

Daniel Lopresti
For long-term, outstanding contributions to the advancement of IAPR and its activities and for extraordinary leadership service

Umapada Pal
For outstanding, tireless service to IAPR as General Chair of the 27th International Conference on Pattern Recognition (ICPR 2024) and Chair of the 2022-2024 Fellow Committee

Terence Sim
For outstanding leadership of the IAPR Ad Hoc Hybrid Conferences Committee

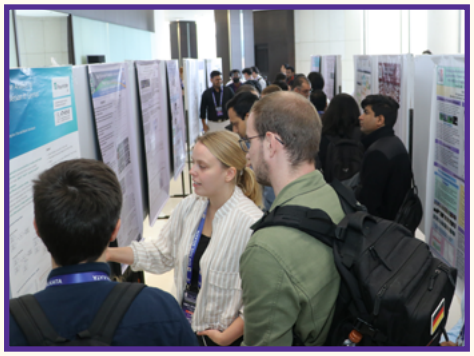
Sergio Velastin
For outstanding service to IAPR as Chair of the 2022-2024 Membership Committee

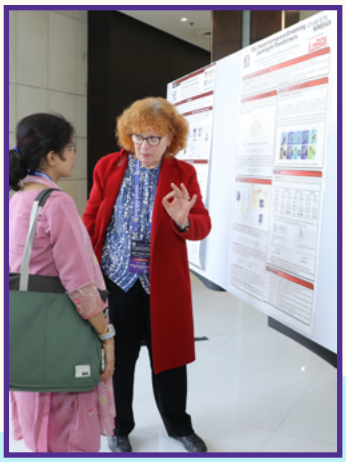
In research and in leadership, women are increasingly involved in the IAPR community, and their presence at ICPR 2024 was no exception. From the prestigious King-Sun Fu Award, won by Tin Kam Ho (click here for more information), to events and sessions throughout the conference, women were actively contributing to ICPR's relevance and its success.

The poster (left) and banner (top of the next page) were designed by Linda O'Gorman, Executive Secretariat of IAPR. A full report on the Women @ICPR 2024 Panel, written by Maria De Marsico and Ingela Nyström, can be found here (it's our EDI Column for this issue). A close-up version of the hexagon-timeline is shown in this issue's "Then and Now" feature, linked here.

IAPR WOMEN at ICPR 2024

Click here for a full report on the Women at ICPR 2024 Panel





Social and Cultural Programs

Three social programs, rich in Indian culture, music and dance, were enjoyed by attendees at ICPR 2024.

Chhau Dance

was performed at the Welcome Dinner at Cafe Ekante, Kolkata, India. It is a traditional folk dance of West Bengal, India. More information on the Chhau Dance is available here.

A Flute Recitation

by Pandit Sudip Kumar Chattopadhyay, Kolkata, was enjoyed by attendees at the ICPR 2024 Banquet. For a sample of this beautiful music, click here.

Odissi Dance

was also performed at the banquet, by Kolkata Mayur Lalit Dance Academy. Odissi dance involves carefully choreographed gestures and flowing body movements, and is one of several classical forms of dance in India, orginating in Odisha, eastern India.

Artificial Intelligence for **Healthcare Applications**

3rd International Workshop

Goals

The goal of AIHA 2024 was to present recent advances in AI techniques for healthcare applications, and to bridge artificial intelligence and machine learning researchers and practitioners with clinicians interested in exploiting AI potentialities in their clinical practice.

Organizers

Chairs: Nicole Dalia Cilia, University of Enna Kore, Italy
Francesco Fontanella, University of Cassino and Southern Lazio, Italy
Claudio Marrocco, University of Cassino and Southern Lazio, Italy

Click for Complete List of Organizers

Previous Editions

2nd AIHA 2022- Montréal, Québec, Canada
1st AIHA - Milano, Italy

13 Countries Represented

Endorsed by IAPR

Join In! Research Commentary

A special session during the AIHA workshop addressed how artificial intelligence can be effectively integrated into rehabilitation protocols to enhance assessment, personalization, and continuity of care. Discussions focused on AI-driven motion analysis to provide precise, real-time, and low-cost assessments adaptable to individual patient needs. There was broad consensus among participants that clinically feasible AI systems — characterized by minimal setup and real-world data use — can significantly optimize recovery processes. However, challenges remain in standardizing data collection and ensuring cross-platform interoperability. Future directions include the development of adaptive tele-rehabilitation platforms and deeper integration of wearable technologies. Several researchers expressed interest in collaboration, particularly in projects bridging AI engineering and clinical rehabilitation.

~ Nicole Dalia Cilia

Keynote

Alessandro Del Vecchio
Friedrich-Alexander-University Erlangen-Nürnberg, Germany

Interfacing the Human Spinal Cord with Minimally Invasive Sensors and Machine Learning Systems for the Next Generation of Neural Interfaces

Submissions

32 received,
2 reviewers/paper,
11 accepted for oral presentation,
plus 10 short oral presentations

ICPR 2024 Workshop Reports

Goals

The goal of CWE 2024 was to identify and address the unique challenges posed by analysis of image and video data acquired during wireless capsule endoscopy (WCE) of the gastro-intestinal (GI) tract. The workshop brought together pattern recognition scientists interested in developing image and video algorithms for analysis of WCE data and clinical practitioners interested in using the results of WCE image/video data analysis.

Organizers

Program Committee:
Suchendra M. Bhandarkar (University of Georgia, USA)
Kiran Raja (Norwegian University of Science and Technology (NTNU), Norway)
Anuja Vats (Norwegian University of Science and Technology (NTNU), Norway)
Marius Pedersen (Norwegian University of Science and Technology (NTNU), Norway)
Kishor Upla (Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, India)
Sudhish N George (National Institute of Technology (NIT) Calicut, India)

2 WCWCE Invited Talks

Anirban Mukhopadhyay (Technical University Darmstadt, Germany)
Dynamic Learning with Neural Cellular Automata
Ananda Shankar Chowdhury (Jadavpur University, India)
A Journey in Medical Image Segmentation

Travel Support from
University of Georgia (USA),
NTNU (Norway)
and SVNIT (Surat, India)
Endorsed by IAPR

Submissions

3 submissions were accepted
(3 oral presentations)

3 Countries Represented:
Norway
Portugal
India

Join In!
Research Commentary

Digestive system diseases like Crohn's disease, inflammatory bowel disease, and colorectal cancer are affecting a large population across the world. Wireless Capsule Endoscopy (WCE) is a method of screening for colorectal cancer that is both relatively pain free and eliminates the fear of traditional colonoscopy. Since WCE carries cameras on board, recording video of the gastro-intestinal (GI) system while travelling through it, it can, in principle, screen the entire GI system, requiring little effort from the patient. The WCE procedure does not require the presence of medical personnel, nor special facilities to perform the screening as the video is recorded continuously and transmitted to a remote system. With decreased cost related to hospital stays and other benefits, WCE is seen as a promising alternative to other screening techniques for early-stage colorectal cancer detection.

WCE image/video analysis comes with a set of unique challenges. Due to the passage mechanism through the digestive system, not all frames can be captured. Moreover, the images captured by WCE are of much lower spatial resolution than what most medical professionals are used to analyzing and machine learning experts are used to annotating to create training samples. The loss of temporal and spatial resolution need to be taken into account in downstream analysis of WCE image/video data. The following classical computer vision and pattern recognition issues need to be addressed and solved in the context of WCE data acquisition capabilities and limitations: classification of GI pathologies, segmentation of GI pathologies, WCE video summarization, visualization of GI pathologies for clinical diagnosis, WCE image and video enhancement, creation of annotated datasets for machine learning-based WCE data analysis, structure from WCE capsule motion (rigid and non-rigid) in the GI tract, and 3D reconstruction of nonrigid anatomical structures in the GI tract.

~ Suchendra M. Bhandarka

ICPR 2024 Workshop Reports

IMTA IX - *Image Mining. Theory and Applications*

9th International Workshop, December 1, 2024

Goals

The main purposes of the IMTA-IX-2024 workshop were a) to combine modern mathematical approaches and technologies for image analysis and image recognition with the demands arising in applied problems; b) development and discussion of the mathematical aspects of image analysis and pattern recognition, mainly of image-mining – a leading line of the modern mathematical theory of image analysis. The workshop was organized to serve scientists interested in how the main subject of image mining may merge profitably with other fields, such as computational topology, lattice algebraic methods, descriptive image algebras or machine learning.

Organizers

Workshop Co-Chairs: Igor Gurevich (Russian Academy of Sciences, the Russian Federation)
Davide Moroni (National Research Council of Italy (CNR), Italy)
Bernd Radig (Munich Technical University, Germany)
Vera Yashina (Russian Academy of Sciences, the Russian Federation)
Scientific Secretary: Maria Antonietta Pascali (National Research Council of Italy (CNR), Italy)

Click for Complete List of Organizers

2 Keynotes

Stefania Sardellitti
University of Italian Chambers of Commerce, Italy
Topological Signal Processing Over Cell Complex Spaces

Igor Gurevich, Davide Moroni, Maria Antonietta Pascali, & Vera Yashina
Organizers: Affiliations listed above
Image Mining: Current Problems in Theory and Applications

Previous Editions

8th IMTA 2022 - Montréal, Québec, Canada (on-line)
7th IMTA 2020 - Milan, Italy (on-line)
6th IMTA 2018 - Montreal, Canada
5th IMTA 2015 - Berlin, Germany
4th IMTA 2013 - Barcelona, Spain
3rd IMTA 2010 - Angers, France
2nd ITMA 2009 - Lisbon, Portugal
1st ITMA 2008 - Funchal, Madeira, Portugal

Submissions

46 submissions received;
32 were accepted for oral presentation.

8 Countries Represented

Republic of Belarus (1)
India (3)
Italy (4)
Jordan (1)
Canada (3)
China (3)
Russian Federation (21)
United States of America (2)

Supported by
National Committee for Pattern Recognition and Image Analysis of the Russian Academy of Sciences;
Federal Research Center of the Russian Academy of Sciences;
The National Research Council of Italy;
Munich Technical University;
and IAPR TC16;
Sponsored by IAPR

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IMTA IX - *Image Mining. Theory and Applications*

9th International Workshop, December 1, 2024

(Continued from previous page)

Join In! Research Commentary

Discussion of the keynote paper, *Image Mining: Current Problems in Theory and Applications* (Igor Gurevich, Davide Moroni, Maria Antonietta Pascali, and Vera Yashina) was devoted to the theoretical and applied aspects of a wide class of problems in the following fields:

1. Extraction, processing, analysis, comparison, clustering, and detection of objects, recognizing and assessing image quality
2. Signal recognition, including spectral analysis
3. Statistical problems, including development of special metrics
4. Studies of the mathematical, including algebraic properties of multimodel image representations
5. Methods for constructing, combining, and learning fast multialgorithmic and fuzzy classifiers
6. In-depth study and optimization of convolutional neural networks
7. Applied problems of machine vision, artificial intelligence, and machine learning

Main points from the discussion regarding further research can be summarized as follows:

• The construction of a unified mathematical theory of image analysis is still under way;

• The number of contributions devoted to the theoretical aspects of image analysis is decreasing, which is explained by the commercialization of this direction to the detriment of scientific development.

• In the future, the organizers of the workshop plan to reduce the number of purely applied presentations and invite authors with theoretical results.

• Problems of artificial intelligence are based on the fundamental results of mathematical theories of pattern recognition, machine learning, and image analysis.

• When developing new methods of image analysis and recognition, there is a tendency to expand the mathematical apparatus by involving the areas of mathematics that were not previously used in image analysis (in particular, lattice algebra, Turing machine, and topology).

• The gap between the capabilities of new mathematical methods of image analysis and recognition and their actual use in solving applied problems remains significant.

• There is still an excessive use of neural networks in solving applied problems of image analysis and image recognition, and quite often without proper justification of the solution method and interpretation of the results.

• Technological achievements and extended storage capabilities support the growth of large and detailed, (albeit possibly noisy and damaged) sets of data represented as images.

• Methods of intelligent data analysis allow us to extract valuable knowledge from complex, disaggregated, and ill-structured data, which makes it possible to successfully apply them in quite diverse applied fields: medical diagnostics, robotics, technical diagnostics and nondestructive control, precision agriculture, new computer and information systems for support of industrial and information technologies, remote sensing, anthropogenic and environmental forecasting and monitoring, automation of scientific research, and many others.

~ Vera Yashina

ICPR 2024 Workshop Reports

Multi- and Cross-Modal Information for Enhanced Pattern Recognition (MCMI)

MCMI 2024

December 1st, 2024, Kolkata, India

co-located with ICPR 2024

Goals

The MCMI workshop was organized to bring together researchers working on multimodal AI models, including experts from audio processing, computer vision, natural language processing, and related fields, to share and discuss new methods for analyzing and understanding patterns across multiple types of data, such as images, audio, and text.+

Organizers

Workshop Chairs:
Moreno La Quatra (Kore University of Enna, Italy)
Giovanni Garraffa (Kore University of Enna, Italy))
Nicole Dalia Cilia (Kore University of Enna, Italy)
Vincenzo Conti (Kore University of Enna, Italy)
Salvatore Sorce (Kore University of Enna, Italy)
Valerio Mario Salerno (Kore University of Enna, Italy)

Click for Complete List of Organizers

Keynote

Abhijit Das, BITS Pilani Hyderabad, India
Tense of Learning Representation for Multimodal and Crossmodal Modelling

Organizer Travel Supported by Kore University of Enna
Endorsed by IAPR

Submissions

15 submissions received;
3 reviewers per paper;
10 were accepted for oral presentation.

Join In! Research Commentary

A central research question discussed at MCMI 2024 was how to effectively integrate multiple modalities in deep learning systems. Researchers elaborated on which fusion strategies work best for different applications, and how various modalities (visual, textual, audio, etc.) can complement and enhance each other's capabilities for improved pattern recognition.

Through presentations and a dedicated round table session, participants discussed optimal fusion approaches that may still be application-dependent rather than universal. For simple multimodal interactions, simpler fusion strategies might be sufficient while non-trivial modality interactions require more complex fusion architectures. Late fusion strategies work well for complementary modalities, while early or intermediate fusion may be preferred when modalities contain overlapping information.

Interesting discussions included the importance of self-supervised learning (SSL) techniques for multimodal systems, as emphasized in the keynote presentation. There were also discussions about exploring how large foundation models could be used for more effective multimodal learning, especially for applications with limited domain-specific data.

~ Moreno La Quatra

8 Countries Represented

Bangledesh (2)
Brazil (1)
Czech Republic (1)
France (1)
India (2)
Italy (1)
Taiwan (1)
USA (1)

ICPR 2024 Workshop Reports

MPRSS 2024

8th Multimodal Pattern Recognition for Social Signals in Human Computer Interaction

In Conjunction with the 27th International Conference on Pattern Recognition, December 1, 2024

Goals

The goal of MPRSS 2024 was to apply pattern recognition and machine learning methods to the perception of users' affective states, activities and intentions. Building intelligent artificial companions capable of interacting with humans in the same way humans interact with each other is a major challenge in affective computing. Such a type of interactive companion must be capable of perceiving and interpreting multimodal information about the user in order to be able to produce an appropriate response. This workshop brought together scientists interested in improving systems for pattern recognition in multimodal human-computer interactions.

Organizers

Chairs: Mariofanna Milanova (University of Arkansas at Little Rock , USA)
Friedhelm Schwenker (University of ULM, Germany)
Co-Chairs: Mamata S Kalas (KIT´s College of Engineering, India)
Steffen Walter (University of Ulm, Germany)

Online Workshop

Sponsored by IAPR

Previous Editions

7th MPRSS 2022 - Montréal, Québec, Canada
6th MPRSS 2020 - Milano, Italy
5th MPRSS 2018 - Beijing, China
4th MPRSS 2016 - Cancun, Mexico
3rd MPRSS 2014 - Stockholm, Sweden
2nd MPRSS 2013 - Lausanne, Switzerland
1st MPRSS 2012 - Tsukuba, Japan

Keynote

Distinguished Young Investigator
Patrick Thiam, Ulm University, Germany

Deep Learning Architectures for Pain Recognition based on Physiological Signals

Join In! Research Commentary

MPRSS 2024 focused on exploring strategies for integrating multimodal foundational models into human-computer interface applications. One of the questions was how best to use NVIDIA NIM microservices. A demo was shown and discussed, exploring the use of NVIDIA NIM with a set of easy-to-use microservices for accelerating the deployment of foundation models on any cloud or data center while keeping data secure.

~ Mariofanna Milanova

Submissions

20 submissions received;
3 reviewers / 4 papers;
13 were accepted for oral presentation.

7 Countries Represented

Germany (3), Iraq (2)
Poland (1), Pakistan (1)
India (3), Spain (1)
USA (7)

Tutorial

Self-Paced NVIDIA Course
Generative AI with Diffusion Models

Extended Papers will be published in *MDPI Computers*, Special Issue

ICPR 2024 Workshop Reports

The 3rd International Workshop on Pattern Recognition in Healthcare Analytics

In conjunction with the 27th International Conference on Pattern Recognition

Goals

As with previous editions, the goal of the third PRHA workshop (PRHA 2024) was to showcase the latest developments in deep learning and machine learning frameworks for various healthcare tasks, including risk prediction, disease progression modeling, subtyping and phenotyping, and medical image and text recognition.

Organizers

General Co-Chairs: Arzucan Özgür (Boğaziçi University, Türkiye)
İnci M. Baytaş (Boğaziçi University, Türkiye)
Ujjwal Maulik (Jadavpur University, India)
Bert Arnrich (Hasso Plattner Institute (HPI) and the University of Potsdam, Germany)

Click for Program Committee

Online Workshop

Submissions

15 submissions received;
at least 2 reviewers per paper;
8 accepted for oral presentation.

2 Keynotes

Utpal Garain (Indian Statistical Institute, India)
User Centric Explanation of Machine Learning Decisions for AI-aided Medical Diagnosis

Fenglong Ma (Pennsylvania State University, USA)
Recent Advances in Predictive Modeling with Electronic Health Records

4 Countries Represented

Canada
India
Türkiye
Norway

Sponsored by IAPR

Join In! Research Commentary

Healthcare analytics tasks require interpretable modeling and domain knowledge. The datasets used in these tasks often contain sensitive information and are small-scale. Since collecting more data is not always an option, researchers resort to generative models to create synthetic medical data to improve the performance of healthcare-related tasks. As the reliability and diversity of the generated data are not always guaranteed, and the content of the data should be clinically plausible, a research question emerges as to how generative models can be effectively applied to healthcare tasks.

Various studies suggest that generative models, such as Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), and diffusion models, can be used to simulate clinical scenarios and facilitate the development of data-driven diagnostic systems. These models have significant potential in medical imaging. Widespread integration of pre-trained foundation models also paves the way for multi-modal approaches where medical images and texts are used together to improve performance.

While generative models offer significant potential in healthcare, their use also introduces several risks. Although generative models could be helpful to generate new data that can improve the generalizability of the supervised models, large datasets are required to train the generative models. Therefore, the same challenges of data privacy and medical data collection difficulty still hold for generative models. Pre-trained models could be a solution. However, the shift between source and target datasets might introduce new challenges.

Another significant point is the bias of the generative models. If the generative model cannot be trained with a large-scale dataset, the diversity of the synthetic content might be limited. Therefore, the reliability and diversity of the synthetic medical data should be carefully evaluated before they are used to train models for downstream tasks. Finally, the complex architectures of the generative models are treated as black-box models that prevent the explainability of the model outcomes.

The literature shows that the healthcare analytics domain benefits from generative models to enhance various healthcare tasks. Many studies propose effective ways of integrating synthetic medical data into clinical setups. While generative models should be studied to support the clinical decision-making frameworks, the reliability and clinical accountability of the synthetic content should be carefully inspected. Furthermore, more explainable designs are needed to encourage collaboration between computer scientists and clinical researchers.

~ Inci Baytas

ICPR 2024 Workshop Reports

IAPR TC7 Earth Observation

PRRS 2024

13th IAPR Workshop on Pattern Recognition in Remote Sensing

Goals

The Pattern Recognition in Remote Sensing Workshop 2024 brought together researchers from both pattern recognition and remote sensing, with emphasis on the application of pattern recognition methods to remotely sensed data.

Organizers

Remote Organizers: Ribana Roscher, Forschungszentrum Jülich GmbH, Germany & University of Bonn, Germany
Charlotte Pelletier, Université de Bretagne-Sud, France
Sylvain Lobry, Université Paris Cité, France
Marc Rußwurm, Wageningen University and Research, The Netherlands

On-site Organizers: Ujjwal Verma, Manipal Institute of Technology, India
Johannes Leonhardt, University of Bonn, Germany

Click for Program Committee

2 Keynotes

Daya Sagar (Indian Statistical Institute, India)
Mathematical Morphology in Retrieval, Analysis, Reasoning, Modelling and Visualization of Patterns of Relevance to Geosciences: An Illustrative Overview

Biplab Banerjee (Indian Institute of Technology Bombay, India)
Few-shot Open-set Learning in the Context of Hyper-spectral Image Classification - Some Perspectives

Previous Editions

12th PRRS 2022 - Montréal, Québec, Canada
11th PRRS 2020 - Online
10th PRRS 2018 - Beijing, China
9th PRRS 2016 - Cancun, Mexico
8th PRRS 2014 - Stockholm, Sweden
7th PRRS 2012 - Tsukuba, Japan
6th PRRS 2010 - Istanbul, Turkey
5th PRRS 2008 - Tampa, USA
4thPRRS 2006 - Hong Kong, China
3rd PRRS 2004 - London, UK
2nd PRRS 2002 - Niagara Falls, USA

3 Countries Represented

India (4), Greece (1), & Italy (1)

Submissions

13 submissions received; single-blind review with 3 reviewers/paper; 6 accepted for oral presentation.

ISPRS (Technical co-sponsor)
Sponsored by IEEE GRRS & IAPR

On-site Organizers Johannes and Ujjwal

Biplab Banerjee Keynote

Join In! Research Commentary

Many of the presentations at PRRS 2024 revolved around the topics of self-supervised learning and foundation models. It is agreed that such techniques will be of increasing importance in the near future due to their potential to overcome key challenges in remote sensing, such as scarcity of labeled data and domain shifts.

However, while some researchers advocate for domain-specific training techniques and models focusing exclusively on remote sensing data, others suggest leveraging general-purpose vision models such as Segment Anything, and adapting or fine-tuning them with minimal adjustments. The lack of standardized benchmarks for some remote sensing tasks and the diversity of remote sensing data (e.g., multispectral, SAR) add to the complexity. Addressing this challenge may require multi-modal foundation models that can seamlessly integrate data from heterogeneous sources.

~ Johannes Leonhardt

ICPR 2024 Workshop Reports

RRPR 2024
5th Workshop on Reproducible Research in Pattern Recognition

Goals

RRPR 2024 was intended as both a short participative course on the Reproducible Research (RR) aspects, leading to open discussions with the participants, and as a practical workshop on how to actually perform RR. Another key goal for gathering the research community was to further advance the scientific aspects of reproducibility in pattern recognition research.

Organizers

Main Chairs:
Daniel Lopresti (Lehigh University, USA)
Bertrand Kerautret (LIRIS, Université de Lyon 2, France)
Miguel Colom (Centre Borelli, ENS Paris-Saclay, France)
Federico Bolelli (University of Modena and Reggio Emilia, Italy)

Co-Chairs:
Pascal Monasse (LIGM, École des Ponts Paris, France)
Jean-Michel Morel (Centre Borelli, ENS Paris-Saclay, France)
Benjamin Perret (ESIEE, Université Gustave Eiffel, France)
Hugues Talbot (Center for Numerical Vision, CentraleSupelec, France)
Burak Yildiz (Delft University of Technology, The Netherlands)

Click for Complete List of Committees

Keynote

Dan Lopresti (Lehigh University, Bethelehm, PA, USA)
Promoting Reproducibility of Research Results in International Events (Report from the 4th RRPR)

Previous Editions

4th RRPR 2022 - Montréal, Québec, Canada
3rd RRPR 2020 - Online
2nd RRPR 2018 - Beijing, China
1st RRPR 2016 - Cancun, Mexico

9 Countries Represented

India (3), Austria (2), Italy (2), United States (2), Norway (1), Germany (1), Bangladesh (1), Russia (1), Taiwan (1)

Invited Talk

Bertrand Kerautret
(LIRIS, de Lyon 2, France) Presentation of Proposed IAPR TC RR Project

Sponsored by IAPR

Submissions

20 submissions received; 3 reviewers/paper for Track 1 (RR Frameworks); 2 reviewers/paper for Track 2 (RR Results); 5 papers were accepted for oral presentation in Track 1 and 8 were accepted for oral presentation in Track 2. More details here.


Dan Lopresti Keynote

Join In! Research Commentary

Discussion of important research problems at RRPR 2024 centered on how to increase the reproducibility and replicability of research papers and how to motivate researchers to focus on these issues.

The keynote presenter noted that several strategies have been proposed to improve reproducibility, one of which is the development of online demonstrations as a tool to help authors showcase the reproducibility features of their work and assist reviewers in evaluating its quality. However, some researchers have raised concerns about the feasibility of such demonstrations, especially in the case of complex codebases or when special hardware or software resources are required. While no full consensus was reached, a potential common ground could be the introduction of a dedicated submission track for reproducible papers, encouraging authors to share reproducible artifacts without imposing unrealistic constraints on all submissions.

In connection with the organization of the next ICPR in 2026, we plan to implement a special submission process related to this topic. The idea is to propose a dedicated submission track that includes an additional step for online demonstrations, inspired by the system used by *IPOL Journal* (www.ipol.im).

~ Bertrand Kerautret

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FOR ITEMS OF GENERAL INTEREST TO PATTERN RECOGNITION FOLKS

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-C.B.

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Meeting and Education Planner

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2025

Month	Days	Meetings, Workshops & Schools	Previous edition & link to Report	Venue	Paper/ Application Deadline
June	2-6	SSB 2025 22nd International Summer School for Advanced Studies on Biometrics for Secure Authentication: Biometrics in the Generative AI Era	2025	Alghero **Italy**	closed
	23-25	SCIA 2025 Scandinavian Conference on Image Analysis	2019	Reykjavik **Iceland**	closed
	25-27	GbR 2025 14th IAPR TC15 Workshop on Graph-based Representations in Pattern Recognition	2023	Caen **France**	closed
	25-28	MCPR 2025 17th Mexican Conference on Pattern Recognition	2024	Guanajuato **Mexico**	closed
Jun-Jul	30-3	IbPRIA 2025 12th Iberian Conference on Pattern Recognition and Image Analysis	2023	Coimbra **Portugal**	closed
July	7-9	DLG 2025 2nd Summer School on Deep Learning on Graphs		Bertinoro **Italy**	May 1
	26-28	MVA 2025 (website in development) 19th International Conference on Machine Vision Applications	2023	Kyoto **Japan**	closed
Sept	8-11	IJCB 2025 International Joint Conference on Biometrics	2023	Osaka **Japan**	closed
	15-19	ICIAP 2025 23rd International Conference on Image Analysis and Processing	2019	Rome **Italy**	closed
	16-21	ICDAR 2025 19th International Conference on Document Analysis and Recognition	2023	Hubei **China**	closed
	25-27	ISPR 2025 5th International Conference on Intelligent Systems and Pattern Recognition	2024	Hammamet City **Tunisia**	Jun 30 2025
Oct	14-17	IWAIPR 2025 IX International Congress on Artificial Intelligence and Pattern Recognition	2021	Varadero **Cuba**	May 11 2025
	24-26	ICCPR 2025 14th International Conference on Computing and Pattern Recognition	2024	Beijing **China**	Jun 5 2025
Nov	3-6	DGMM 2025 4th International Conference on Discrete Geometry and Mathematical Morphology	2024	Groningen **The Netherlands**	closed
	10-13	ACPR 2025 The 8th Asian Conference on Pattern Recognition	2023	Gold Coast **Australia**	Jun 10 2025
	25-28	CIARP 2025 (website in development) 28th Iberoamerican Congress on Pattern Recognition	2024 (report coming)	Bogota **Columbia**	TBD
Dec	1-4	ICPRS 2025 The 15th International Conference on Pattern Recognition Systems	2024	Vina Del Mar **Chile**	Aug 1 2025
	10-13	CVIP 2025 10th International Conference on Computer Vision and Image Processing	2024	Rupnagar **India**	Aug 10 2025

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Meeting and Education Planner

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= Sponsored by IAPR		**2026**			
Aug	16-20	ICPR 2026 -28th International Conference on Pattern Recognition	2024	Lyon **France**	TBD
	24-26	S+SSPR 2026 - Joint IAPR International Workshops on Statistical Techniques in Pattern Recognition and Structural and Syntactic Pattern Recognition	2024	Bern **Switzerland**	May 15 2026
Aug-Sept	30-4	ICDAR 2026 - 20th International Conference on Document Analysis and Recognition	2024	Vienna **Austria**	Feb 1 2026

IAPR NEWSLETTER SUBMISSION DEADLINES FOR JULY 2025

Sunday	Monday	Tues	Wed	Thurs	Friday	Saturday
Jun 29	Jun 30 *Invited Next Generation Essay Due*	Jul 1	Jul 2	Jul 3	Jul 4 *Invited Getting to Know IAPR Fellow Essay Due*	Jul 5
Jul 6	Jul 7 *New ads, plus...* ***All Meeting Reports! ALL Meeting Reports! ALL MEETING REPORTS***	Jul 8	Jul 9	Jul 10	Jul 11 *Standing Committee Columns/News; Technical Committee News; Changes to existing ads*	Jul 12
Jul 13	Jul 14 *From the ExCo Essay and News Points*	Jul 15	Jul 16	Jul 17	Jul 18 *Conference Calls for Papers, Proposals, & Applications*	Jul 19
July 20 through July 26: ***Final Copy Draft and Review Week (New materials can no longer be accepted)***						
Jul 27	Jul 28 *Publication Day (Planned)*	Jul 29	Jul 30	Jul 31	Aug 1	Aug 2

Wondering when to send new or unlisted content? Please contact the Layout Editor by Jun 15, 2025

THE INTERNATIONAL ASSOCIATION FOR PATTERN RECOGNITION
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Please email comments or ideas to EiC or LE! Thank you!