

IAPR

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Newsletter

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Academics, industrialists and the IAPR's Industrial Liaison Committee (IAPR-ILC)

by Bob Fisher, Chair, and the IAPR- ILC
rbf@inf.ed.ac.uk

Editor's note:

As part of the new series of essays on collaborations in pattern recognition in the "From the Editor's Desk" column, the IAPR Newsletter decided to start at the beginning, with a discussion of the IAPR's Industrial Liaison Committee.

The Newsletter is grateful to the ILC for this contribution and hopes that it will open the door for other researchers to discuss collaborations they've been involved in or to invite future collaborations with forthcoming research.

~ Jing Dong, IAPR Newsletter EiC

The Industrial Liaison Committee is one of the IAPR's Standing Committees, which means it has had a long existence. But what does it do? And what should it do? In theory, it should improve the relations between the academic and company members in the community. So far, so good. But what does *that* mean, as a good relation means that both sides benefit?

What might the companies and company employees who are IAPR members want? Certainly, new ideas that can help advance their products—this stimulates employee attendance at conferences like the 2020 International Conference on Pattern Recognition (ICPR 2020). Companies also want opportunities to present their research, as this enhances their reputation for innovation and helps keep them in the public eye. The employees themselves also want opportunities to present their research, as part of their career enhancement. But all of these things can be done without a relationship with the IAPR.

What might the academics want from industrial engagement? They look for partners for new research problems or opportunities to exploit their research.

Achieving the goals for both sides can be problematic, as companies focus their resources on developing new products, and thus their timescales are



CALLS for PAPERS

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

2020

[DAS 2020](#)

4th IAPR International Workshop on Document Analysis Systems
Wuhan, China
Deadline: December 20, 2019
Dates: May 17–20, 2020

[ICFHR 2020](#)

17th International Conference on Frontiers in Handwriting Recognition
Dortmund, Germany
Deadline: March 1, 2020
Dates: Sep. 8-10, 2020

[ICPR 2020](#)

25th International Conference on Pattern Recognition
Milan, Italy
Deadline: March 2, 2020
Dates: Sep. 13-18, 2020

[ANNPR 2020](#)

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

often much shorter than academic timetables (which have to take account of learning and teaching, public engagement, publication, etc). Perspectives differ as well: an academic researcher is interested in novelty and understanding, whereas often the company researcher is interested in what's of interest to the customer along with internal issues like ease and reliability of manufacture and maintenance. Small companies often have only one or two products, and need to focus—research that is off their critical path is not that useful to them.

If a company is large enough to think of research in a longer time frame, e.g. as laying the foundation for future products through either developing new IP (Intellectual Property) or through developing employee skills, then partnership with university academics could work. The company gets access to the academic's skills and fresh knowledge; the academic gets access to a new source of research problems and data.

Is there something that the IAPR could do to help facilitate these interactions? Academics might worry that they will not find publishable innovations, but my experience has been that looking at new problems leads to unexpected opportunities for new research.

People and talent also are at the heart of academic-industry relations. University researchers look for company jobs; companies look for employees. The IAPR has taken some small steps in helping facilitate this relationship, with its Company Internship Brokerage page (See: <http://homepages.inf.ed.ac.uk/rbf/IAPR/INDUSTRIAL/>) and through a 'speed-dating' event between companies and potential employees planned for ICPR 2020 (<https://iapr.org/icpr2020>).

Are there more opportunities for building academic-industry relationships? How can the IAPR's Industrial Liaison Committee help?

Let us know - we want to strengthen the IAPR's academic-industry relationships.

Bob Fisher, IAPR-ILC Chair, rbf@inf.ed.ac.uk
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Calls from IAPR Committees

From the IAPR Education Committee:

Call for Applications for IAPR Research Scholarships

<https://iapr.org/docs/IAPR-EC-RS-Call-2018.pdf>

Description: IAPR Research Scholarships, awarded by the IAPR through its Education Committee (IAPR-EC), seek to make possible mobility across institutions and international boundaries for Early Career Researchers working in fields within the scope of the IAPR's interests. Through this program, the IAPR sees an opportunity to make a significant contribution to the development of Early Career Researchers as well as the wider Pattern Recognition community.

Covered expenses and duration: The scholarship covers round trip travel & basic living expenses for a visit of less than 12 months.

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

Contact information:

IAPR Secretariat

c/o Linda O'Gorman, secretariat@iapr.org

From the IAPR Industrial Liaison Committee:

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

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

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

For companies with internships to list: For students:

(see examples at the URL above)

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

Please email your listings as follows:

To: Bob Fisher - rbf@inf.ed.ac.uk

Subject: IAPR internship listing

Details:

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

NOTE: At the time of publication, there were 32 opportunities listed and over 7200 views since November 2017.

Contact Information:

Bob Fisher, rbf@inf.ed.ac.uk
Chair, IAPR-ILC

From the IAPR

Executive Committee (ExCo):

Call for Proposals for "Summer" Schools

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

Deadline schedule:

Deadline:

February 1st

June 1st

October 1st

School dates:

April-July

August-November

December-March

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

To be eligible for a grant, the organizers must work through at least one of the IAPR's technical committees as they develop and present the proposal.

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

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

Calls from IAPR Committees (continued)

From the IAPR
Conferences & Meetings Committee (C&M)
Call for Bids to Host ICPR 2024
Deadline: May 1, 2020

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

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

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

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

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

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

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

Deadlines and Decisions:

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

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

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

Laurence Likforman
IAPR C&M Chair

CALLS FOR NOMINATIONS

FOR AWARDS TO BE PRESENTED @ ICPR 2020

In the coming months, an official Call for Nominations for the prestigious King-Sun Fu Prize, the highest honor given by the IAPR, will be posted at the IAPR web site

https://iapr.org/fellowsandawards/awards_kingsunfu.php

The IAPR established this prize in honor of the memory of Professor King-Sun Fu, who was instrumental in the founding of the IAPR, served as its first President, and is widely recognized for his extensive contributions to the field of pattern recognition.

This biennial prize is given to a living person in recognition of an outstanding technical contribution to the field of pattern recognition.

The nomination must be made by a member of a national member society of IAPR and by endorsement of at least five members, representing at least two member societies different from that of the nominator. The prize recipient shall be selected by the Prize Committee, subject to approval by the IAPR Governing Board.

Members of the IAPR Executive Committee, as well as of the Prize Committee, shall be ineligible for the prize and may not serve as nominators or endorsers.

J.K. Aggarwal Prize

A Call for Nominations will soon be posted at the IAPR web site:

https://iapr.org/fellowsandawards/awards_aggarwal.php

Professor Aggarwal is widely recognized for his extensive contributions to the field of pattern recognition and for his participation in the IAPR's activities.

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

The prize recipient shall be selected by the J. K. Aggarwal Prize Committee, subject to approval by the IAPR Governing Board, upon nomination by a member of a national member society of IAPR and by endorsement of four members, representing at least two member societies different from that of the nominators and nominee.

Members of the IAPR Executive Committee, as well as of the J.K. Aggarwal Prize Committee, shall be ineligible for the prize and may not serve as nominators or endorsers.

Maria Petrou Prize

A Call for Nominations will soon be posted at the IAPR web site:

https://iapr.org/fellowsandawards/awards_petrou.php

The Maria Petrou Prize is awarded biennially at ICPRs to a living female scientist/engineer who has made substantial contributions to the field of Pattern Recognition, and whose past contributions, current research activity and future potential may be regarded as a model to both aspiring and established researchers. This Prize honors the memory of Professor Maria Petrou as a scientist and engineer of the first rank, and particularly in her role as a pioneer for women researchers and highly successful role model. She is widely recognized for her extensive contributions to the field of image processing and pattern recognition. She also made significant contributions to the growth of IAPR, covering significant leadership roles.

The Prize consists of a suitably inscribed plaque and a cash amount partially covering a visiting period of the winner at some research institution or university.

IAPR Fellow Award

Call for Nominations

<https://iapr.org/fellowsandawards/index.php>

Deadline: January 31, 2020

NOTE: Please click on the link above for the complete CfN.

We welcome nominations for the award of FIAPR. Anyone is eligible to be nominated, except for current members of the IAPR Executive and Fellow Committees.

To initiate a nomination, a nominator must write and submit an IAPR Fellow Nomination Form. Current members of the Executive and Fellow Committees may not serve as nominators.

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

Each electronic submission will be acknowledged by an email.

Massimo Tistarelli, Chair,
IAPR Fellow Committee
tista@uniss.it

An IAPR Her Story: Vera Yashina



Editor's note:

The IAPR Newsletter launched this series of feature articles with the belief that every woman scientist—early, mid, or late-career—has a compelling story to tell about her life and career choices. "An IAPR Her Story" is a space for women to share their life experiences as they relate to the IAPR community.

We are grateful to Dr. Vera Yashina for sharing "Her Story" in this issue.

Please also see the inaugural article written by Prof. Gabriella Sanniti di Baja [\[40:2\]](#)

~ Jing Dong, IAPR Newsletter Editor-in-Chief

I was born in Moscow, Russian Federation, into a family of engineers. My mother designed electricity for the new tram routes. My father engaged in research in the field of national fire safety, invented and tested experimental equipment and extinguished artificially created fires. Our great family values were work, honesty, and love for neighbors and friends. As a family—together with a large company of friends—we went hiking and camping. You cannot imagine better rest than sleeping in a tent, swimming in the river, and sitting by the fire with your closest friends. So I grew up in a very romantic environment. My favorite subjects were mathematics and music. I liked to play with children and arrange performances, and I was interested in art.

The 1990s saw a difficult political situation in the country. My mother had to leave the intellectual work she loved and take a physical labor job for three years preparing dinners for a big company. Later she mastered the new profession of chief accountant. My father had to quit work on his PhD thesis and choose a more promising direction for the creation of the system of fire certification in his investigation institute. He began to travel around the world on business trips and continued to fight for justice, honesty, and development in the country.

When my brother and I had to choose a profession, the most prestigious areas were considered Economics and Finance. My mother tried to draw our attention to economic development, but my brother wanted to study Physics and Biology (now he has doctoral degree in the biology sciences), and I wanted to study Mathematics and Computer Science or piano performance. The latter would have required that I go to another city, and my parents persuaded me that mathematics and computer science would be a better direction. I continued to play piano and entered to the M.V. Lomonosov Moscow State University in the Faculty of Computational Mathematics and Cybernetics.

My specialty was optimal control, but in my last year at University, I came to a meeting with Dr.-Eng. Igor Gurevich,

Vera Yashina was born in Moscow, Russian Federation in 1980; studied and obtained Diploma mathematician at the M. V. Lomonosov Moscow State University in the Faculty of Computational Mathematics and Cybernetics. She earned her PhD in 2002 under the supervision of Dr-Eng. Igor B. Gurevich at Dorodnicyn Computing Center of the Russian Academy of Sciences (RAS) (now it is a part of Federal Research Center "Computer Science and Control" of the RAS).

She is currently a leading researcher at this center, where she has worked since 2001. Her scientific expertise is in mathematical theory of image analysis, image algebras, models and medical informatics. She is coauthor of more than 70 papers in peer reviewed journals, conference and workshop proceedings.

She is a member (since 2006) and scientific secretary (since 2015) of the National Committee for Pattern Recognition and Image Analysis (NCPRIA) of the RAS.

She has taken part in the organization of many scientific events and has served on the IAPR Membership and Education Committees. She is a member (since 2006), scientific secretary (from 2010 until 2014) and vice-chair (since 2019) of IAPR Technical Committee 16 (IAPR-TC16) "Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis".

She is a member of editorial board of "Pattern Recognition and Image Analysis. Advances in Mathematical Theory and Applications" international journal of the RAS.

who showed me the prospects of development in the field of pattern recognition and image analysis. I decided to do my PhD Thesis in his scientific laboratory. At the same time as I was studying in graduate school, I went to work as a programmer in a private firm. The work was related to the creation of databases on the decommissioning of nuclear power plants. I was passionate about this activity, but I did not want to give up my scientific investigations. So I continued with both endeavors.

Since 2003, I have been involved in development of Mathematical Theory of Image Analysis. Dr.-Eng. Gurevich suggested, proved, and developed with his other pupils and me the Descriptive Approach to Image Analysis and Recognition. Within the approach a new class of image algebra was introduced, defined, and investigated (descriptive image algebras). My PhD Thesis concerned with descriptive image algebras with one ring. My scientific interests were formed under the influence of the enthusiasm, thoroughness, and responsible attitude to the task of my supervisor Dr.-Eng. Gurevich.

Mathematical Theory of Image Analysis is based on the basic theories of pattern recognition: "Pattern Theory" (U.Grenander), "Theory of Categories Techniques in Pattern Recognition" (M.Pavel), "The Algebraic Approach to Recognition, Classification and Forecasting Problems" (Yu.I.Zhuravlev). In the framework of the scientific school of Yu.I.Zhuravlev, several essential results were obtained in the algebraic direction by V.L.Matrosov and by K.V.Rudakov. I'm honored to have worked with full members of the Russian Academy of Sciences Professor Yu.I.Zhuravlev and Professor K.V.Rudakov in Federal Research Center

"Computer Science and Control" of the Russian Academy of Sciences.

The materials on image algebras present the main approaches to create a unified language for concepts and operations used in image processing and analysis. The most famous image algebras are the standard image algebra by G.Ritter and the descriptive image algebra by I.Gurevich. A meeting with Gerald Ritter in 2003 made a deep impression on me, and the conversation with him defined my choice of scientific interests.

In 2005, my oldest daughter was born, and I had to choose between scientific work and work as a programmer. The decision was fairly easy for me, because, at that time, mother-scientists were given a free schedule. I did not take maternity leave (not once with any of my three daughters, born in 2005, 2009, and 2013) and chose to continue to participate in interesting scientific research. I would like to have been able to be a new mother, do research, and do programming work, but that was not practical. I am pleased, however, that the fundamental scientific results from that work were used in the development of software kits for image analysis and recognition and for solutions to important and difficult applied problems in automated bio-medical image analysis.

From 2005 on, I have balanced the needs of my family with the demands of a research career while also increasing my involvement with the international scientific community.

I got involved in organizational activities. I became a member of the National Committee for Pattern Recognition and Image Analysis (NCPRIA) of the Russian Academy of Sciences (the IAPR member society from the Russian

Federation) in 2006 and have been involved in IAPR activities since then.

In 2015, I become a scientific secretary of the NCPRIA and took part in the organization of many scientific events – workshops, conferences, and meetings. Through this, I met many important Russian scientists in the field of pattern recognition and image analysis, including Professor Dr. Yu.G.Vasin, Professor Dr. A.P.Nemirko, Professor Dr. Yu.V.Obuhov, Professor Dr. V.V.Ryazanov, and many others.

The NCPRIA helps the Russian pattern recognition community be a part of the international pattern recognition community: observing the current level of the research in the field of pattern recognition and image analysis around the world and taking part in decision making concerning the IAPR.

I was a scientific secretary of IAPR Technical Committee 16 (IAPR-TC16) "Algebraic and Discrete Mathematical Techniques in Pattern Recognition and Image Analysis" from 2010 till 2014. Now I'm Vice-Chair of this TC.

From 2010 to 2014, and again for the 2018-20 term, I was part of the IAPR Membership Committee. During this time we invited several new member societies into IAPR. Now I am involved in attracting a new community member from Kazakhstan, and I consider that the IAPR might include other new member societies from the former USSR republics in the future.

Beginning in 2015, I also became a member of IAPR Education Committee, which is of high interest for me. Prospective and current students are the future of the IAPR. The IAPR-EC is collecting teaching material of high quality for world-wide use and we are supporting the education

of young scientists. These are endeavors that I am very happy to be a part of.

I was pleased to serve as a proxy for the NCPRIA Governing Board member at the IAPR Governing Board Meetings in 2010 in Istanbul, Turkey, 2012 in Tsukuba, Japan, and 2018 in Beijing, China. Participating in these GB meetings and attending the ICPRs and other international conferences and workshops, I was happy to meet and to have long conversations with many valued scientists: Professor Dr. H. Niemann (Erlangen, Germany), Professor Dr. G. Ritter (Florida, USA), Professor Dr. Scs. José Ruiz-Shulcloper (Havana, Cuba), Professor Dr. O. Salvetti (Pisa, Italy), Professor Dr. Bernd Radig (Munich, Germany), Professor Dr. Dietrich Paulus

(Koblenz, Germany), Dr. Eckart Michaelsen (Ettlingen, Germany), Dr. Davide Moroni (Pisa, Italy), Professor Dr. Ingela Nyström (Uppsala, Sweden), Professor Dr. Ching Suen (Monreal, Canada), Professor Dr. Alexander Nedzved (Minsk, Belorussian). They have become my international friends.

I am very lucky because I like my job. Scientific activity gives sufficient freedom for creativity and free choice of research topics. My children see me busy, and despite the fact that they do not always have my attention, they appreciate my involvement in my career. I would like my contribution to the development of science to be greater, but it is also important for me to actively participate in the lives of my children: to be close at important moments, to instill values, to see all stages of their

growing up, to share their ideas about life. Important aspects of my work life are communication with other people and the contribution that I can bring to the development of the NCPRIA and the representation of Russian scientists in the IAPR.

It's very important for a woman to have her own business, meet new people, and sometimes travel without a family (the feeling of self-worth is always reflected in how your loved ones treat you). The main difficulty is in finding a balance between family, personal interests, and productive activities.

Work, honesty, and love. These are the values that have helped me make the, sometimes difficult, choices that have defined my career up to this point and will support the choices I will make in the future.

The First Women at ICPR Workshop *"Making the invisible women visible"*

Sunday, September 13, 2020

Milan, Italy

In conjunction with ICPR 2020

Organizing Committee:

Co-Chairs Alexandra Branzan Albu (Canada) and Maria del Marsico (Italy)

Ingela Nyström (Sweden)

Lale Akarun (Turkey)

Bob Fisher (UK)

The first Women at ICPR workshop is intended to be a celebration of women's contributions to the IAPR.

It aims to foster a culture embracing inclusiveness and diversity values within the IAPR, by creating an opportunity for young and senior women scientists to interact and connect with each other.

This workshop builds upon past social events (coffee break and lunch) for women organized at ICPR 2016 (Cancun) and ICPR 2018 (Beijing).

While this workshop is in support of women, it is not exclusive to women attendees.

All are welcome to attend.



IAPR... The Next Generation

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

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

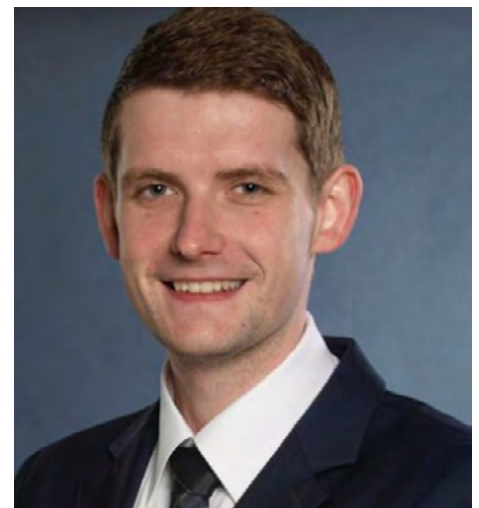
~Jing Dong, Editor -in-Chief

Eugen Rusakov

Eugen Rusakov received his bachelor's degree in computer engineering (Technische Informatik) from University of Applied Science Pforzheim (Germany) in 2013 and his master's degree in computer engineering (Technische Informatik) from University of Heidelberg (Germany) in 2016.

Afterwards he joined the group of Pattern Recognition in Embedded Systems in the Department of Computer Science at the University of Dortmund (Technische Universität) as a PhD student.

He is interested in pattern recognition methods and deep learning techniques for embedded systems. In his research he focuses on optimization methods for deep learning algorithms.



Editor's note:

Eugen Rusakov was the recipient of the ICFHR 2018 IAPR Best Student Paper Award. You can find the report on this workshop in the January 2019 issue of the IAPR Newsletter [41:1].

~ Jing Dong, IAPR Newsletter EiC

How did you get involved in pattern recognition?

Originally, I graduated in Computer Engineering. During my Master thesis, I was working on optimization methods concerning Artificial Intelligence (AI) algorithms especially Neural Networks, and I discovered the huge potential of AI for so many different areas besides computer science.

Interested in doing my PhD in pattern recognition (PR), I took the chance of joining the Pattern Recognition Group at the University of Dortmund (Germany). The main focus of the group is in document analysis, with strong expertise in handwriting recognition and information retrieval, specifically for historical documents. After I joined the group, I knew this was the right place and a great environment to pursue my PhD while working on an interesting topic.

Working with images increased my interest in PR, and I've quickly developed new skills in image processing (computer vision) and statistics. This is how I landed in the world of AI and PR.

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

The focus of the team is on recognizing handwriting, especially on historical documents, with different writing styles from different epochs and various vocabularies and languages. More specifically, the main focus is on so called Word Spotting. Here, the target is to retrieve words from a collection of documents given a user defined query.

To preserve information, many different writing systems were developed in the past. Today, huge archives exist to store documents found by archeologists during excavations or by historians from more recent periods. Usually these documents are stored in

their physical form which makes it difficult to have fast access. Newer technologies are capable of digitizing document collections, which simplifies access to the information for researchers or museums.

Collecting information from historical or ancient documents requires knowledge of the language, vocabulary, and signs (alphabet) used. Therefore, context information is required for transcription. Typically, philologists are looking for occurrences of specific signs in several different documents to infer the meaning of a sign. The outcome is a slow searching process with correspondingly slow access to the information included in the documents.

In this context, AI based technologies are emerging as a useful tool to make document collections accessible and searchable. Next to speech recognition, handwriting recognition has a long tradition in the field of PR. Over the years, the capabilities of handwriting recognition systems had increased from single word recognition to transcription of sentences and paragraphs. In the late 1990's, a new task was invented called word spotting. Inspired by the area of information retrieval, the idea of word spotting is to retrieve all occurrences of a certain query found within a document collection. This approach is especially interesting for applications where direct transcription is not always possible. For philologists, working on historical and ancient document collections, the idea of retrieving possible candidates given a query is more interesting and useful. Here, a word spotting system is applied like a search engine, presenting the user (expert) with several alternatives while giving

them a choice between different candidates. In recent years, deep learning methods have achieved outstanding performance in several computer vision tasks. Using these methods, the performance of word spotting systems could be significantly improved, achieving impressive results on many different handwriting styles. The shift towards better performance makes the idea of word spotting even more attractive.

Furthermore, word spotting is not limited to retrieving words from document collections. The big picture of information retrieval (word spotting) can be extended to not only "spot" words but also whole sentences, content information, and even a certainty context. The spotting system should be capable of retrieving information besides the query, showing the user different areas and domains in documents that could be important with respect to the query. Such a system could also retrieve information based on a question defined by an expert.

The goal of our group is to develop methods to automatically process documents and make them searchable and accessible. We believe that AI has the potential to help philologists and historians to look back in time and understand how mankind developed.

How can the IAPR help young researchers?

During last summer, I visited the International Computer Vision Summer School (ICVSS) in Sicily and presented my current work during the poster sessions. For me, it was very interesting to get in contact with other young

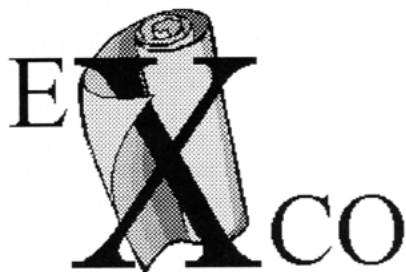
researchers and receive feedback concerning my work. This summer school was a great opportunity to talk to other PhD student and Professors and get inspired by their work. Furthermore, I attended the reading groups consisting of a group of students supervised by two mentors. During these reading groups, we had the opportunity to discuss many different topics in the area of pattern recognition and the work of researchers. Getting different opinions and views was very inspiring and some of them were surprising. We were discussing the career paths of the mentors and different views on artificial intelligence, while asking them questions about important decisions during their research.

In my opinion, attending events like summer schools is very important for young researchers. Getting in touch with other researchers, whether young or old, can be extremely inspiring. These contact opportunities give me a broader range of views and influence my own thoughts about artificial intelligence, pattern recognition and my own career as a young researcher.



Receiving the IAPR Best Student Paper Award and ICFHR 2018: Eugen Rusakov (center) with Organizing Chair Ranga Setlur (left) and Program Committee Chair Christian Viard-Gaudin (right).





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



President's note:

Inclusivity is vital to the ethics and aims of the IAPR. The purpose of this column is to share the IAPR's initiatives in this area with the IAPR community and to ask for ideas on what else can be done to ensure that all feel like a part of that community.

~ Apostolos Antonacopoulos, IAPR President

News from the IAPR Executive Committee

The ExCo had its interim (in the year between ICPRs) meeting in Florence, Italy, in August. Here's some of the news from that productive exchange:

- The ExCo discussed several ways to make ICPR and the IAPR even more relevant and valuable to its member societies and their individual members. Member society representatives to the Governing Board proposed a number of useful and interesting ideas and, starting with ICPR2020 a number of them will be implemented. More at ICPR2022 where we have more time to plan. Keep the suggestions coming!
- A new Women@ICPR Workshop is proposed for ICPR2020 in Milan - watch this space!
- The ExCo is exploring ideas on organising a hackathon at (or just before) ICPR2020. Ideas and volunteers are most welcome - contact us!
- There's a New IAPR ad hoc committee on Equality, Diversity and Inclusion.

The IAPR seeks to increase understanding “among **all** practitioners of **all** nations in the role that machine intelligence can play in accelerating technical and scientific progress.” This is a vital phrase in the IAPR’s purpose statement (<https://iapr.org/aboutus/>).

And, “all” is the vital component.

In 1978, when it was incorporated, the IAPR could boast inclusivity of nations. In 1978, few talked about other ways to be inclusive. Over the past several years, the IAPR Executive Committee has made gender-inclusivity a focus of activity, and, going forward, will continue to focus on equality, diversity and inclusion.

Building awareness in the community was the first step. In previous Newsletters we have discussed gender inequity.

- In January 2016, the ExCo published and distributed a memo, “Encouraging gender diversity in nominations for IAPR Awards” [38:1].
- In the April 2016 issue, the From the Editor’s Desk challenged readers to do more to achieve gender balance, “What can you do to help achieve better gender balance? We want to hear your thoughts.” [38:2]. And again, with STEM, Part 3, in April 2018 [40:2].
- In April 2018, the IAPR Newsletter launched a new series of feature articles, “An IAPR Her Story” to encourage and inspire female researchers through the example of their peers and experiences of senior female researchers. (see Gabriella Sanniti di Baja [40:2] and Vera Yashina [in this issue].)

What have been some of the steps after that?

- The IAPR and ICPR organisers have planned “for women only” events at recent ICPRs. These coffee breaks and luncheons at the IAPR’s flagship conference have been designed to foster new connections among female scientists at all stages in their careers.
- The IAPR's Standing Committees are appointed taking into account geographical, gender and seniority balance.
- The IAPR Nominating Committee seeks balance in its slate of nominees for Executive Committee positions.

- The IAPR Constitution and Bylaws Committee (C&B) has done a painstaking review of these documents and proposed changes to more gender-neutral language that were approved at the last IAPR Governing Board meeting held during ICPR 2018 in Beijing, China.
- The IAPR Membership Committee works with researchers in countries with developing research cultures to form associations and welcome them into the IAPR family.
- The IAPR ExCo has also addressed inequity caused by lack of finances, which can influence the possibilities for scholars to be in contact with their peers.
 - The ExCo encourages diversity in the distribution of travel stipends that provide financial assistance for scholars attending ICPR.
 - The IAPR Research Scholarships [see [IAPR-EC RS Call for Applications](#)] aim to foster collaboration through enabling a visiting student or early career researcher from a lab with limited means to work for a time in a well-funded, established one.
 - The IAPR supports summer/winter schools by offers IAPR scholarships to students who would otherwise not be able to attend (see [ExCo Initiative on Technical Committee Activities](#)).

And where does the IAPR go from here?

On our way to [ICPR 2020](#) and beyond, the IAPR wants to continue and increase its efforts with respect to equality, diversity, and inclusion.

- The IAPR will continue all of the initiatives mentioned above.
- Women@ICPR, a new ICPR2020 Workshop co-chaired by IAPR 1st Vice President Alexandra Branzan Albu, will focus on the blind spots that may still exist, while encouraging—especially early career—female researchers to continue their careers in science, e.g. by offering coaching and feedback from those with more experience.
- A new ad-hoc committee on Equity, Diversity and Inclusion, with Edwin Hancock as its Chair, has been formed in the 2018-20 term. The Equity, Diversity and Inclusion Policy that will be a product of this committee will be adopted by the IAPR as part of its working practices. The IAPR will expect events sponsored and organised by the association and its affiliated organisations to comply with this policy.

Big plans for a critical issue.

As always: your thoughts and feedback are very welcome, because, **"The IAPR: that's you!"**

IAPR Then and Now...Executive Committee Officers

The IAPR was formed in 1973 and incorporated in 1978. The (all male) ExCo officers in those years were:

1973:

President: K.S. Fu
 1st Vice President: H. Freeman
 2nd Vice President: C.K. Chow
 Secretary: R.S. Ledley
 Treasurer: L.S. Rotolo

1978:

President: Herb Freeman
 1st Vice President: M. S. Watanabe
 2nd Vice President: (vacant)
 Secretary: C.D. Verhagen
 Treasurer: P.W. Becker

The 2018-2020 ExCo:



President
 Apostolos Antonacopoulos
 First Vice-President
 Alexandra Branzan-Albu
 Second Vice-President
 Lale Akarun
 Treasurer
 Dan Lopresti
 Secretary
 Arjan Kuijper
 Past President
 Simone Marinai

Call for Papers & Call for Proposals for Workshops, Competitions, Tutorials, and Demos



25th INTERNATIONAL CONFERENCE ON PATTERN RECOGNITION

Milan, Italy 13 | 18 September 2020

“putting Artificial Intelligence to work on patterns”

IMPORTANT DATES

- Jan. 15, 2020 - Workshop proposals
- Jan. 15, 2020 - Competition proposals
- Mar. 2, 2020 - Paper submission deadline
- Apr. 1, 2020 - Tutorial proposals
- Jun. 15, 2020 - Demo / Exhibit proposals

<https://iapr.org/icpr2020>

GENERAL CHAIRS

Rita Cucchiara (Univ. of Modena and Reggio Emilia, Italy), Alberto Del Bimbo (Univ. of Firenze, Italy), Stan Sclarloff (Boston Univ., USA)

PROGRAM CHAIRS

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

WORKSHOP CHAIRS

Giovanni Maria Farinella (Univ. of Catania, Italy)
Tao Mei (JD.COM, China)

TUTORIAL CHAIRS

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Bruce A. Maxwell (Colby College, USA)
Lorenzo Seidenari (Univ. of Firenze, Italy)

CHALLENGE CHAIRS

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

TRACK CHAIRS

ARTIFICIAL INTELLIGENCE, MACHINE LEARNING FOR PATTERN ANALYSIS

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

BIOMETRICS, HUMAN ANALYSIS AND BEHAVIOR UNDERSTANDING

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

COMPUTER VISION ROBOTICS AND INTELLIGENT SYSTEMS

Luigi Di Stefano (Univ. of Bologna, Italy)
Javier Ruiz-del-Solar (Univ. of Chile, Chile)
Yoichi Sato (Univ. of Tokyo, Japan)

MEDIA ANALYSIS AND UNDERSTANDING

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

IMAGE AND SIGNAL PROCESSING

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

The 25th International Conference on Pattern Recognition (ICPR 2020), sponsored by the International Association for Pattern Recognition (IAPR), will be an international forum for discussions on recent advances in the fields of Pattern Recognition and related technologies and applications. We seek for qualified contributions in the areas of Artificial Intelligence and Machine Learning for Pattern Analysis, Computer Vision, Robotics and Intelligent Systems, Biometrics and Human Behavior Analysis, Media Analysis and Understanding, Image and Signal Processing.

We seek Tutorials on core techniques and emerging research topics that are of interest within the Pattern Recognition community. We seek for Workshops on timely topics and applications of the field. They are expected to provide a forum for active exchange of ideas and experiences. We seek for proposals for Challenges on key applicative topics that demonstrate the state of the art of capabilities of Pattern Recognition, Computer Vision and Media Analysis in real world applications.



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e l'Integrazione del Media



IAPR Technical Committee News

This section the IAPR Newsletter publishes short, timely items by and about the IAPR's Technical Committees.

There are three main aims:

1. to give the IAPR's TCs regular access to the broader IAPR community
2. to introduce the various TCs to those who are new to the IAPR and
3. to keep the rest of the IAPR community interested and informed about TC happenings.

~Jing Dong, IAPR Newsletter EiC

IN THIS ISSUE:

[TC1 Statistical Pattern Recognition Techniques](#)
[TC3 Neural Networks & Computational Intelligence](#)
[TC7 Remote Sensing and Mapping](#)
[TC10 Graphics Recognition](#)

IAPR TC1 - Statistical Pattern Recognition Techniques

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

Battista Biggio, Chair
Simone Scardapane, Vice Chair

The IAPR TC1 on Statistical Pattern Recognition Techniques aims to promote interaction and collaboration among researchers working in statistical pattern recognition and related applications. Its role is to expand and promote interest in these topics, with a focus on real-world scenarios and machine learning in cybersecurity.

The TC is currently organizing the next edition of our flagship conference S+SSPR, to be held in Padua (Italy) from September 13th to September 18th, 2020 (the conference website will be published soon). During the conference, we will also award the 2020 edition of the Pierre Devijver award, of which you can read the history and procedures online (https://iapr.org/fellowsandawards/awards_devijver.php).

We are in the process of expanding the range of activities of the committee and planning several new activities. You can find all the information on the TC website <http://pralab.diee.unica.it/iapr-tc1/>.

If you are working in this domain areas and want to be kept up-to-date (or maybe contribute to the TC's activities), please subscribe to our mailing list by sending an email to battista.biggio@diee.unica.it.

IAPR TC3 Neural Networks & Computational Intelligence

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

Edmondo Trentin, Chair
Markus Hagenbuchner, Vice Chair

We are glad to confirm that the 9th Workshop on Artificial Neural Networks in Pattern Recognition (ANNPR 2020 <https://iapr.org/annpr2020>), that embraces the official biennial meeting of TC3, will be held at Zurich University of Applied Sciences (Zurich, Switzerland) on September 2-4, 2020. ANNPR 2020 is co-organized with the Swiss Alliance for Data-Intensive Services in order to boost the link between academia and industry. Frank-Peter Schilling and Thilo Stadelmann of the ZHAW School of Engineering serve as the Chair and Co-Chair of the event, respectively, while the secretariat will be held by Annette Zani at ZHAW. The organizers, supported by an enthusiastic international team, have recently obtained Sponsorship from the IAPR. The submission of papers will be open in early 2020. A preliminary CfP can be found at <https://annpr2020.ch/cfp/> and a contact request form is available online at <https://annpr2020.ch/contact/>.

For all the news on TC3 activities, including the forthcoming 9th ANNPR, we invite you to check out our website at <http://iapr-tc3.diism.unisi.it/index.html>, where you can learn about TC3, access brand new datasets, and possibly join us. At <http://iapr-tc3.diism.unisi.it/Research.html>, in particular, you can find our Manifesto on "off-the-mainstream" research.



More IAPR Technical Committee News

IN THIS ISSUE:

[TC1 Statistical Pattern Recognition Techniques](#)
[TC3 Neural Networks & Computational Intelligence](#)
[TC7 Remote Sensing and Mapping](#)
[TC10 Graphics Recognition](#)

IAPR TC7 - Remote Sensing and Mapping <http://iapr-tc7.ipb.uni-bonn.de/>

Jie Shan, Chair
Ribana Roscher, Vice Chair

The mission of TC 7 (Remote Sensing and Mapping) is to promote the use of pattern recognition methods in the analysis of data collected from satellites or airborne sensors used for Earth observation.

Currently TC7 is hosting a special issue in IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS, <http://www.grss-ieee.org/jstars-special-issues/>), and we are welcoming submissions with original contribution by **Nov. 30, 2019**.

In addition, members of TC7 have reached out to sister societies in attending ISPRS Geospatial Week (June 2019, Twente, the Netherlands), and CVPR Conference (June 2019, Long Beach, USA). As co-authors, Dr. Jie Shan and his students won the best paper award in the EarthVision Workshop 2019 (<https://www.grss-ieee.org/earthvision2019/awards.html>).

And, TC7 is planning to continue its flagship Pattern Recognition in Remote Sensing (PRRS) Workshop in conjunction with ICPR 2020.

IAPR TC10 - Graphics Recognition <http://iapr-tc10.univ-lr.fr/>

Alicia Fornés, Chair
Jean-Christophe Burie, Vice Chair

The TC10 (Technical Committee on Graphic Recognition) announces a special issue to be published in the **International Journal of Document Analysis and Recognition (IJ DAR)**, Springer Nature.

Special Issue on *Deep learning for graphics recognition: document understanding and beyond*

This special issue aims to report the original and innovative advances in Graphics Recognition using deep learning methods. Thus, articles presenting reviews, perspectives, new methods and applications using deep learning for graphics recognition are cordially invited.

Guest editors: K.C. Santosh (University of South Dakota, USA), Jean-Christophe Burie (La Rochelle Université, France); Alicia Fornés (Universitat Autònoma de Barcelona, Spain), and Muhammad Muzzamil Luqman (La Rochelle Université, France)

Important dates

Paper submission deadline:	Jan 10, 2020
First review notification:	March 20, 2020
Decision (final notification):	June 20, 2020
Production (Springer, IJDAR):	August, 2020

More details at https://iapr-tc10.univ-lr.fr/?page_id=645



Meeting Reports

Conferences, Workshops & Summer/Winter Schools

DICTA 2018

Canberra, Australia

10-13 December

<https://dicta2018.org/>



General Chairs:

[Mark Pickering](#) (UNSW Canberra, Australia)

[Ambarish Natu](#) (IEEE ACT, Australia)

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

[Shaodi You](#) (Data61, Australia)

by Mark Pickering, General Co-Chair

This year, the 20th International Conference on Digital Image Computing: Techniques and Applications (DICTA) returned to Canberra, after nine successful conferences in the other Australian cities.

DICTA is the main Australian Conference on computer vision, image processing, pattern recognition, and related areas. Established in 1991 as the premier conference of the Australian Pattern Recognition Society (APRS), DICTA has been successfully held in major cities in Australia and New Zealand during the past 27 years. DICTA 2018 was technically sponsored by the Institute of Electrical and Electronics Engineers (IEEE) and the International Association for Pattern Recognition (IAPR).

DICTA 2018 offered an outstanding technical program thanks to the dedicated work of Technical

Program Committee members and the reviewers.

We were honoured to have keynote presentations from three distinguished researchers:

- *Ultrasound and Mixed Reality in Image-Guided Interventions* by Prof Terry M Peters, Western University, Canada.
- *High Dynamic Range Video for Enhanced User Experience* by Prof Frederic Dufaux, CNRS, France.
- *Medical Image Computing End-To-End: Challenges and Opportunities in The Real World* by Prof Arcot Sowmya, University of New South Wales, Sydney, Australia.

Even though DICTA is considered predominantly an Australian conference, in recent years it has emerged as truly an international event. DICTA 2018 attracted paper submissions from different countries across Africa, Asia, Australasia, Europe, and North

America.

To ensure the quality of the conference, each submission underwent a rigorous double-blind review process, with at least three independent reviews solicited before a decision was made. Based on the recommendations of the reviewers, the technical program committee accepted 119 high quality papers to be presented at the conference, where 47 papers were from authors based outside Australia.

Among the 119 accepted papers, 30 papers were presented in the following five Oral Sessions: Biomedical and E-Health Applications; Computer Vision, Machine Learning and Human Computer Interaction; Segmentation, Classification and Enhancement; Image Processing; and Applications.

Six Papers were presented in a Special Session on Advances in 3D Remote Sensing Data Analysis. The remaining 83 papers



were presented in three Poster Sessions.

All the accepted papers presented at DICTA 2018 have been published by the IEEE in a conference proceedings and permanently archived in the IEEE Explore digital library.



As per DICTA tradition, the organizing committee nominated two outstanding papers to receive the best paper award and the best student paper award. The winners of these awards were announced during the conference banquet at the National Museum of Australia. For 2018 the award winners were:

Winner of the DICTA 2018 APRS/ IAPR Best Paper Award:

Fast Optical Flow Extraction from Compressed Video

Sean I. Young and David Taubman, UNSW, Sydney, Australia

Winner of the DICTA 2018 APRS/ IAPR Best Student Paper Award:

Classification of White Blood Cells using Bispectral Invariant Features of Nuclei Shape

K. Al-Dulaimi, V. Chandran, J. Banks, I. Tomeo-Reyes,


and K. Nguyen, Queensland University of Technology, Brisbane, Australia

On behalf of all the general chairs I would like to thank the Technical Program Chairs, Proceedings Chair, Special Sessions Chair, Treasurer, Tutorial Chair, the Advisory Committee and the reviewers. There were also a number of administrative staff and student volunteers who provided valuable ongoing support to make the conference run smoothly. This event could not have been possible without the time and effort of all of these volunteers.

I would also like to thank the long term support from our sponsors, the Defence Science and

Technology (DST) group, CiSRA, APRS, IAPR, and IEEE. Their support is an essential part of the program. Particular thanks go to UNSW Canberra, who provided financial sponsorship, as well as services in finance, conference registration and staff hours.

Proceedings of
DICTA 2018
are available through



<https://ieeexplore.ieee.org/xpl/conhome/8615628/proceeding>





14TH INTERNATIONAL CONFERENCE ON PATTERN RECOGNITION AND INFORMATION PROCESSING (PRIP'2019)

<https://prip.bsuir.by>

Honorary Chair:

Vadim Bogush (Belarus, Belarusian State University of Informatics and Radioelectronics)

Chair:

Valery Prytkov (Belarus, Belarusian State University of Informatics and Radioelectronics)

Vice-Chairs:

Alexander Tuzikov (Belarus, United Institute of Informatics Problems)

Sergey Ablameyko (Belarus, Belarusian State University)

The International Conference on Pattern Recognition and Information Processing is a biennial event organized by:

- the United Institute of Informatics Problems
- the Belarusian State University
- the Belarusian State University of Informatics and Radioelectronics.

The 14th edition, PRIP'2019 was organized by Belarusian State University of Informatics and Radioelectronics (<https://www.bsuir.by/>) and held on its grounds in cooperation with

- the Belarusian State University
- the United Institute of Informatics Problems of the National Academy of Sciences of Belarus
- the Belarusian Association for Image Analysis and Recognition
- the International Association for Pattern Recognition
- Netcracker Technology
- ISsoft Solutions.

The main goal of the PRIP conference is to establish cooperation between Belarusian

researchers and the international community in the field of information processing.

The main topics of the conference are:

- Pattern Recognition
- Image Analysis
- Signal Processing
- Biometric Technologies
- Systems and Parallel Architectures for Signal and Image Processing
- Knowledge-Based Expert and Decision Support Systems
- Applications of Pattern Recognition and Image Analysis
- 3D Image Processing and Modeling

In addition, new emerging topics are being discussed at PRIP. Some examples of which are: moving object recognition, watermarking, human identification approaches, fuzzy classifiers, deep learning, ontologies, etc.

PRIP'2019 was also dedicated to the memory of Professor Rauf Kh. Sadykhov, doctor of science, well-

known Belarusian scientist in the field of technical cybernetics and computer science, member of the IAPR.

PRIP'2019 received more than 120 paper submissions from 22 countries: (Armenia, Azerbaijan, Belarus, China, France, Georgia, Lebanon, Germany, India, Israel, Poland, Russia, Netherlands, Serbia, Slovakia, South Korea, Switzerland, Singapore, Turkey, Ukraine, United States, and Vietnam).

Program Committee members together with referees carefully reviewed all submitted papers. As a result, 98 papers were selected for inclusion in the

PRIP'2019

**Pattern
Recognition
and
Information
Processing**

Minsk, Belarus
2019

PRIP'2019 scientific program. The proceedings were published by BestPrint company.

The program included four IAPR Keynote Talks by experts in computer vision and pattern recognition:

- Recent Progress in Computer-Vision-based Human Activity Recognition and Related Areas (Gerhard Rigoll, Germany)
- Humanizing Robots' Vision through Machine-Learning Based Artificial Visual Attention (Kurosh Madani, France)
- Image-based medical decision support in the age of deep learning (Henning Müller, Switzerland)
- Reliability Analysis of Multi-State System (Elena Zaitseva, Slovakia)

PRIP'2019 included 2 main sections of 7 parts each:

- Pattern Recognition and Classification, Knowledge-based Expert and Decision Support Systems, Applications of Pattern Recognition
- Image Analysis, Signal and Information Processing, 3D Image Processing and Modeling, Applications of Image Analysis

PRIP 2019 also hosted a workshop on Artificial Intelligence, Deep Learning and Robotics, organized by prominent researchers from:

- University of Applied Sciences Western Switzerland, Sierre, Switzerland
- United Institute of Informatics Problems, National Academy of Sciences, Minsk, Belarus
- Brest State Technical University, Brest, Belarus
- Belarusian State University, Minsk, Belarus
- Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus

Two poster presentations were

also organized:

- Shadow detection based on edge segmentation (Ekaterina Kurbatova and Veronika Lyalina, Vyatka State University, Russia)
- Multivariate scaling of the characteristic features based on pseudo-inverse operations for recognition problems solving (Iurii Krak, Veda Kasianiuk, Hrygoriy Kudin, Olexandr Barmak and Eduard Manziuk, Taras Shevchenko National University of Kyiv, Khmelnytsky National University, Ukraine)

Authors of selected papers will also be invited to submit extended versions for publication in the series of "Communications in Computer and Information Science" (CCIS) in the Springer publishing house.

In addition to the scientific activities, social programs were also available for participants' pleasure:

- a banquet at the local venue with Belarusian traditional foods and drinks on day one
- a visit to The National Academic



Bolshoi Theatre of Belarus to enjoy magnificent La Traviata by Giuseppe Verdi as a finale of day two

- a bus sightseeing tour of Minsk



on day three



PRIP'2019 was a very useful forum where the scientific community could exchange research experience, share new knowledge and foster cooperation among research groups in pattern recognition and related areas. There was a lot of constructive feedback given by the participants during the closing ceremony of PRIP'2019. To implement this and beat the success will be the challenge for the organizers of PRIP'2021 (United Institute of Informatics Problems).

PRIP'2019

May 21-23, 2019, Minsk, Belarus

Brovki str. 6 220013 Minsk, Belarus

Tuesday, May 21, 2019	Wednesday, May 22, 2019	Thursday, May 23, 2019
9:00-13:00 Registration 10:00-10:15 Opening of the conference 10:15-11:10 Plenary session P1 (room 229) 11:10-11:30 Coffee Break 11:30-13:00 Plenary session P2 (room 229) 13:00-14:00 Lunch 14:00-16:00 Session A1 (room 229) Session W (room 232) 16:00-16:15 Coffee Break 16:15-18:00 Session B1 (room 229) Session W (room 232) Conference banquet	9:00-9:45 Plenary session P3 (room 229) 9:45-10:45 Session A2 (room 229) Session B2 (room 232) 10:45-11:00 Coffee Break 11:00-12:30 Session A3 (room 229) Session B3 (room 232) 12:30-13:45 Lunch 13:45-15:45 Session A4 (room 229) Session B4 (room 232) 15:45-16:00 Coffee Break 16:00-17:00 Session A5 (room 229) Session B5 (room 232) Visit to the theatre of opera and ballet	9:00-10:45 Session A6 (room 229) Session B6 (room 232) 10:45-11:00 Session A7 (room 229) Session B7 (room 232) 12:30-13:00 Closing ceremony Sightseeing tour of Minsk

in cooperation with:

16th International Summer School for Advances in Biometric Authentication: *Biometrics and Forensic Science in the Deep Learning Era*

Alghero, Italy
May 27-31, 2019



Directors:

[Massimo Tistarelli](#) (University of Sassari, Italy)
[Josef Bigun](#) (Halmstad University, Sweden)
Enrico Grosso (University of Sassari, Italy)
[Anil K. Jain](#) (Michigan State University, USA)

by Massimo Tistarelli

The 2019 IAPR summer school on biometrics was the 16th edition of a strongly established training course started in 2003 to promote knowledge dissemination and research in Biometrics and related fields. The school was technically co-sponsored by Eurasip, the IAPR and the IEEE and was co-organized by the EU RISE project IDENTITY and the COST Action CA16101 “MULTI-modal Imaging of FOREnsic SciEnce Evidence - tools for Forensic Science”.

The school main theme was related to the application of deep learning technologies to biometrics and forensic science. The school particularly addressed the impact of deep learning in developing more efficient and secure biometric systems.

Several subjects were taught at the summer school, forming a total of 24 hours of theoretical lectures from 17 different lecturers and 4 hours of guided practical sessions using MatLab¹ tools. The subjects ranged from fundamentals (such as machine learning and pattern recognition techniques applied to biometrics) to more advanced topics (such as neuroscience) and applied subjects (such as biometric spoofing and biometric template protection, large-scale evaluation and the deployment of biometrics technologies in forensic cases). This 16th edition of the summer school, featured a line-up of exceptional lecturers, selected from the editorial boards of top-level scientific journals and

¹ The school committee is grateful to MathwWorks for providing a special trial version of MatLab software, specifically for the school students to develop the practical sessions.

Complete list of lecturers and the presented lectures

Monday May 27

- **Prof. Arun Ross** (Michigan State University, USA) *An introduction to biometrics in forensic applications.*
- **Prof. Alessandro Verri** (University of Genova, Italy) *Machine learning (in biometrics).*
- **Prof. Julian Fierrez** (Universidad Autonoma de Madrid) *Iris recognition*
- **Prof. Massimo Tistarelli** (University of Sassari, Italy) *Face recognition*

Tuesday May 28

- **Prof. Davide Maltoni** (University of Bologna, Italy) *Fingerprint recognition*
- **Prof. Mark Nixon** (University of Southampton, UK) *Soft Biometrics.*
- **Dr. Thirimachos Bourlai** (West Virginia University, USA) *Practical biometric recognition systems and project - PART 1.*
- **Prof. Lior Wolf** (Tel Aviv University and Facebook, Israel) *Deep learning techniques for biometrics.*
- **Student presentations** (8)

Wednesday May 29

- **Dr. Jonathon Phillips** (NIST, USA) *Progress and challenges in face and person recognition.*
- **Prof. Jean-Luc Dugelay** (EURECOM, France) *Malevolent schemes in face recognition applications.*
- **Prof. Alice O'Toole** (University of Texas at Dallas, USA) *Understanding face representations in deep CNNs: Face space theory evolves.*
- **Prof. Ida Gobbini** (University of Bologna, Italy) *Mechanisms for recognition of familiar faces.*
- **Prof. James Haxby** (Dartmouth College, USA) *Commonality of the fine-grained structure of neural representations.*

Thursday May 30

- **Student presentations** (4)
- **Round table:** *The role of Deep Learning in Biometrics and Forensic Science*
- **Prof. John Mason** (University of Swansea, UK) *Speaker recognition.*
- **Dr. Michael Brauckmann** (Idemia, France) *Exploiting biometrics: an industrial perspective.*

Friday May 31

- **Prof. Vishal Patel** (Rutgers University, USA) *Continuous authentication in the mobile world.*
- **Prof. Didier Meuwly** (Netherlands Forensic Institute, Netherlands) *The use of biometric data in forensic practice.*
- **Dr. Thirimachos Bourlai** (West Virginia University, USA) *Practical biometric recognition systems and project - PART 2.*
- **Prof. Emilio Mordini** (Responsible Technology, France) *Biometrics and Forensic Science in the Deep Learning Era.*
- **Prof. Massimo Tistarelli** (University of Sassari, Italy) *Concluding remarks and discussion.*

conferences. Prof. James Haxby, an outstanding neuroscientist, presented a lecture on the representation of visual data in the brain and the topographic mapping to design such representations from fMRI recordings. Prof. Lior Wolf, from Facebook Research Labs, presented an overview of how to deploy deep learning and convolutional neural networks in biometrics. Prof. Vishal Patel, from Rutgers University, presented a lecture on the use of mobile devices for continuous authentication. All lecturers, among the most highly reputed experts

in their fields, presented the most up-to-date view in Biometric technologies and Forensic applications.

The school week also included three special sessions on Monday, Tuesday and Thursday evening, devoted to an informal meeting and open discussion among the participants and the lecturers. Monday evening was devoted to a Doctoral Consortium meeting, moderated by Prof. Thirimachos Bourlai. Tuesday evening, Prof. Arun Ross guided a discussion on “Privacy issues in Biometrics”. Finally, Prof. Didier Meuwly,

proposed some burning issues on the application of Forensic Biometrics to real cases.

38 participants attended the school lectures. The class was formed by students coming from different universities, industries and research centres in the following 15 countries (in brackets are the number of participants, if greater than one): Albania (2), Australia (2), Austria (3), Brazil (2), Czech Republic (2), Finland, France (4), Germany (3), Israel (3), Italy (3), Malaysia, Netherlands (3), Russia (3), Switzerland, United Kingdom, USA (3). Ten summer

Editor's note: In addition to the report from the Summer School Directors, the IAPR's ExCo asked that a student submit a report on the school. The IAPR Newsletter is grateful to Maëlig Jacquet for this contribution.

~ Jing Dong, IAPR Newsletter EiC

IAPR Newsletter report on the 2019 Summer School on Biometrics

Maëlig Jacquet, PhD Student at the School of Criminal Justice, University of Lausanne, Switzerland

The Summer School on Biometrics 2019 was related mainly to the development and applications of multimodal biometrics systems, with a specific focus on Deep Learning along with its use for both security and forensic purposes.

In general, what did you learn from the Summer School and, in particular, did you learn anything new?

Through my PhD thesis, I usually focus mainly on the forensic application of biometrics, and more especially of face recognition. Thanks to the many great speakers and students presentations I attended to during the week, I had the opportunity to broaden my reflections. They notably help me to have a better understanding of the whole process of development, implementation and numerous purposes of multimodal biometric systems.

The talks by Prof. Arun Ross (Michigan State University, USA), Prof. Massimo Tistarelli (University of Sassari, Italy), Dr. Jonathon Phillips (NIST, USA) and Prof. Didier Meuwly (Netherlands Forensic Institute, the Netherlands)—among others—discussed the topics most closely related to my PhD work. I learned a lot about limitations and performance of face recognition methods, current efficiency and expected evolution of deep learning algorithms and Bayesian

interpretation of biometric evidence.

Beyond their contribution to the development of biometrics systems, I paid special attention to these topics for their valuable inputs, both methodological and theoretical, to my current questionings in matter of face recognition.

However, presentations focusing on topics on which I am less advanced were particularly instructive, too, for it is so much more enlightening to listen to researchers teach their work than to just learn it in articles. For instance, I could get a more thorough understanding of the development of machine learning and deep neural networks through the talks by Prof. Alice O’Toole (University of Texas, USA) and Prof. Lior Wolf (Tel Aviv University, Israel).

Finally, it was captivating to learn from researchers in domains more distant from my daily work, such as iris recognition—presented by Prof. Julian Fierrez (Universidad Autónoma de Madrid, Spain)—and continuous authentication on mobiles—Prof. Vishal Patel (Johns Hopkins University, USA).

What will you do differently because of what you learned?

The school had, and will have, a direct impact on my research, as it made me think about new problems and

perspectives to improve my thesis project (using new face recognition algorithms, for instance, as VGG Face). In addition, presentations of Prof. Mark Nixon (University of Southampton, UK), on gait analysis, allowed me to take a step back and see a bigger picture surrounding face recognition issues. This transversal overview opens a wide range of research perspectives to develop new models, combining several biometrics, and I look forward to contributing to it.

Why was this a valuable experience for you?

The enrichments I have gained from this school are both professional and personal. The week was an excellent opportunity to meet many researchers, practitioners, and students, and to acquire a considerable amount of knowledge, not only during presentations but also through the inspiring daily conversations between lecturers and PhD students.

Finally, in my opinion, this was a real chance to give us PhD students an opportunity to discuss and exchange ideas with the best researchers we can currently look up to, not only about our projects but also about the academic world we are entering into. Their advice was among the most valuable knowledge we had the chance to bring back.

school students were supported by IAPR grants that had been widely advertised through the school's website and mobile app and at the lectures and gala dinner.

This year's students demonstrated a strong interest in the application of biometrics to forensic cases as well to other scenarios. Most of them are either working directly in the design of biometric systems or pursuing high-level scientific research in the field. This not only facilitated the interaction between students and lecturers, but also stimulated and challenged even the most experienced lecturers with questions and requests for explanations in the course of almost all presentations. As a result, both the students and lecturers were much involved in technical discussions and plans for collaborations.

Most of the students actively took part in the practical sessions. A project was assigned to group splits of the class and an award was assigned to the best projects.

Remarkably, representatives of government agencies and forensic laboratories also attended the school courses. This not only denotes the high reputation gained by the school, but also a deep interest of different government offices in the adoption of newer biometric technologies in the service of the citizens.

A round table on the usefulness and limitations of deep learning for biometric recognition was held on Thursday afternoon. The discussion was actively fostered by Prof. Alice O'Toole and Prof.

Vishal Patel. The students actively participated to the discussion and very interesting conclusions were drawn on the impact of deep learning for biometrics and forensic science.

The school participants were offered the possibility to display a poster on their research activity and to submit a research paper to be orally presented at the special session organized during the week. The participants presented 20 posters, which were available during the entire week.

Twelve Phd students made an oral presentation of their on-going research work:

- **Jacqueline Cavazos** University of Texas at Dallas - USA "Accuracy comparison across face recognition algorithms: Where are we on race bias?"
- **Takoua Guiga** Orange Labs - France "Behavioural Authentication Based on Smartphone Protected Personal Communication Data"
- **Denis Migdal** ENSICAEN - France "Don't listen to my Keystroke Dynamics!"
- **Rahimeh Rouhi** University of Bologna - Italy "Social Network Forensics through Smartphones and Shared Images"
- **Martin Sakin** Brno University of Technology - Czech Republic "Use of Thermal Cameras in Home Environment"
- **Rafael Soares Padilha** University of Campinas - Brazil "Two-tiered facial verification for mobile devices"
- **Dominik Söllinger** University of Salzburg - Austria "PRNU-

based Detection of Finger Vein Presentation Attacks"

- **Jan Tinka** Brno University of Technology - Czech Republic "Connecting Brain Signals with Concepts Classifiable by Machine Learning on Other Data"
- **Yuval Nirkin** Bar-Ilan University - Israel "On Face Segmentation, Face Swapping, and Face Perception"
- **Alice Towler** University of New South Wales - Australia "Do professional facial image comparison training courses work?"
- **Victor Varela** University of New South Wales - Australia "Eye movements and human face perception: An holistic analysis and proficiency classification based on frontal 2D face images"
- **Maëlig Jacquet** Ecole Polytechnique Federal de Lausanne "Comparison of generic and suspect-anchored score-based likelihood ratio assignation models using automatic face recognition systems"

For the future editions of the school we plan to continue with the open evening discussions started this year. These informal meetings were very much appreciated and provided several promising hints for further research and discussion. In the next school edition more care will be devoted to the guidance of the discussion and possibly to taking notes of the discussion outcomes. A list of potential topics for discussion may be also requested from the participants before the school begins.

17th International Summer School
for Advanced Studies on Biometrics for Secure Authentication:

**BIOMETRICS, FORENSICS AND IDENTITY SCIENCE
FOR HUMAN-CENTERED APPLICATIONS**

Alghero, Italy, - June 1-5, 2020; Application deadline February 15, 2020





ICB 2019

The 12th IAPR International Conference on Biometrics

4-7 June | Crete, Greece

General Chairs:

[Mark Nixon](#) (University of Southampton, UK)

[Patrick Flynn](#) (University of Notre Dame, USA)

by the General Chairs

Nearly 120 participants attended ICB 2019 held at the Aldemar Knossos Royal Hotel in Crete, Greece. The conference was technically co-sponsored by both IAPR TC4 (Technical Committee on Biometrics) and the IEEE Biometrics Council. Around 222 papers were submitted to the conference (which is close to a record submission) and eventually 93 papers were accepted from the 189 papers remaining after initial review procedures (including special session papers). This corresponds to an acceptance rate of 49%, and so we can be assured that only the best papers are presented at ICB. Out of 93 papers, 36 were selected for oral presentation and 57 for poster presentation.

The review process was managed by four Program Chairs, with the assistance of more than 100 reviewers. The whole process was conducted double blind using Microsoft CMT with at least two reviewers per paper. The papers accepted cover a wide range of topics including face recognition, mobile-based biometrics, iris, fingerprints, soft biometrics, ear, periocular, palm prints, gait, gesture, anti-spoofing, novel

biometrics, template protection, multi-modal and multi-spectral biometrics. The papers will be made available in IEEE Xplore.



The program included three keynote speakers, Prof. Oleg Komogortsev (IAPR 2019 Biometrics Lecture), Prof. Didier Meuwly, and Prof. Zhen Lei.

Prof. Komogortsev gave a keynote on "Eye Movement Detection Sensors, Biometrics, and Health Assessment". The availability of eye movement detection sensors is set to explode, with billions of units available in future Virtual Reality (VR) and Augmented Reality (AR) platforms. In his talk Prof. Komogortsev discussed the past, present, and future of such sensors and their applications. He also discussed both the applications that initially necessitate the presence of such sensors in VR/AR devices, along with additional uses that would be enabled by those sensors, such as eye movement driven biometrics and health assessment.

The second keynote by Prof. Dr. Didier Meuwly was on forensic

biometrics. Forensic biometrics is defined as the application of human-based and computer-assisted biometric recognition methods and technologies to analyze biometric traces and reference specimens. Forensic biometrics has primarily been developed to address requests from criminal justice about source level inference. In his talk, Dr. Meuwly explained how forensic biometrics can be used for the examination of traces captured in less traditional conditions, such as conflict zones, and to answer other relevant questions beyond the question of the source. These questions focus on the examination of the authenticity and integrity of the trace material and on the characterization of people and their activities, generally on big amounts of data. The characterization of people includes questions, for example, about their number, their age, their gender, their health condition (healthy, deprived, injured, living, dead). The characterization of their activities includes questions about what they do, how, where and when. This new type of request opens new challenges for research and development in forensic biometrics, in terms of relevant datasets, biometric technology and forensic inference.

The third keynote presentation was given by the 2019 recipient of the IAPR Young Biometric Investigator Award (YBIA), Prof. Zhen Lei. In his talk, Prof. Lei shared his experience in face recognition research, along with the introduction of some face recognition applications. In particular, his talk covered deep learning methods in face recognition, including face detection, face alignment, face recognition and face anti-spoofing. Finally, he gave a personal

perspective on the future of face recognition.

During the first day, the conference offered one tutorial on "Human Identification at a Distance by Gait Recognition" and a special session on "The Future of Biometrics beyond Recognition and Anti-Spoofing". The special session included an invited talk by Prof. Arun Ross on "Some Research Problems in Biometrics: The Future Beckons". In his talk, Prof. Ross highlighted some of the research opportunities in biometrics and

discussed its intersection with adjacent fields including forensics, genomics, anthropology and psychology.

ICB exists under the aegis of IAPR TC4, supported by the IEEE Biometrics Council: these are voluntary organizations and always seek and welcome new members and their input.

Best wishes for IJCB 2020 in Houston, TX.



INTERNATIONAL JOINT CONFERENCE ON BIOMETRICS (IJCB 2020)

Houston, USA

Important dates:

IJCB 2020 introduces a two-round paper submission procedure.

First round

Paper submission: December 9, 2019

Decision to authors: February 11, 2020

Camera ready: March 9, 2020

Second round

Paper submission: April 6, 2020

Decision to authors: June 9, 2020

Camera ready: July 6, 2020



General Chair:

Jonas Unger (Linköping University, Sweden)

Program Chairs:

Per-Erik Forssen (Linköping University, Sweden)

Michael Felsberg (Linköping University, Sweden)

Ida-Maria Sintorn (Uppsala University, Sweden)

by Emanuel Sanchez-Aimar, PhD student at Linköping University, and Jonas Unger, Professor at Linköping University

The 21st Scandinavian Conference on Image Analysis (SCIA) was held at the Linköping University Campus in Norrköping, Sweden, nearby the twin city of Linköping, where the first SCIA took place over 40 years ago. SCIA is organized by the host university and Svenska Sällskapet för Bildanalys (SSBA), the IAPR member society from Sweden. The conference was held in the Cinema part of Norrköping Visualization Center. SCIA 2019 received 63 submissions from Europe, North and South Americas, Africa and Asia. 45 (71%) of the submitted papers were first authored by students. 40 papers were accepted as 17 orals and 23 posters, 27 (68%) of which were first authored by students. The accepted papers were published as part of Springer Lecture Notes in Computer Science (LNCS).

Day one of SCIA 2019 began immediately after the end of the co-located event the Swedish Symposium on Deep Learning (SSDL) 2019. For three days, we had the opportunity to attend several oral sessions, poster spotlights (3-minute talks), poster sessions and keynotes given by renowned speakers. The poster sessions took place during coffee breaks, or *fikas*, as they are known in Sweden. Immersed in Norrköping’s “Industrial Landscape” where the campus is located, the poster sessions created an atmosphere for learning about new research breakthroughs as well as discussions and networking.

Deep learning is now ubiquitous in computer vision and image analysis, and its influence was very noticeable in many of the research papers presented at SCIA 2019. The conference covered a wide range of topics such as recognition, segmentation and 3D vision; as well as many exciting industrial-focused applications.

Several of the accepted articles focused on medical imaging, and presented new methods, leveraging from state-of-the-art deep learning techniques with the aim of improving health care.

Each day, the climax of the conference would be an exciting keynote, presenting highly relevant topics. The IAPR Keynote Speaker Professor Laura Leal-Taxié from the Technical University of Munich talked about strategies to leverage temporal information in dynamic scene understanding. Lourdes Agapito from University College London gave a presentation on capturing 3D models of the world from video. Professor Fred Hamprecht from Heidelberg

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



University gave a presentation on efficient signed graph partitioning for computer vision problems. All keynotes were well-reasoned at excellent standards and provided the audience with details of ongoing research work.

As part of the social events we visited the exhibitions at Norrköping Visualization Center, where we went into the dome theatre and experienced a journey through space and time, in which we vividly relived the Apollo 17 moon landing and explored the solar system, as part of an immersive 3D exhibition.

Last but not least, the conference dinner introduced several delicious Swedish dishes, followed by a musical performance by the local band "Norrator", who astonished us with a show of special effects produced by two music generating midi-controlled tesla coils, sparkling to the beat of the music.

During the SCIA conference the Nordic Thesis Award 2017-2018 was given to Martin Daneljan for his thesis "Learning Convolutional

Operators for Visual Tracking". The thesis work was conducted at the Computer Vision Laboratory at Linköping University under supervision by Professor Michael Felsberg. The Nordic thesis award is awarded jointly by the image analysis societies of Denmark, Finland, Norway and Sweden. The award committee for 2017-2018 consisted of Anders Nymark Christensen (Denmark), Joni Kämäräinen (Finland), Robert Jenssen (Norway), and Per-Erik Forssén (Sweden).

The SCIA 2019 Springer best paper was awarded to Phong Nguyen-Ha, and Lam Huynh and Esa Rahtu, and Janne Heikkilä

for the paper titled "Predicting Novel Views Using Generative Adversarial Query Network". An honourable mention was also given to Erik Bylow, Robert Maier, Fredrik Kahl, and Carl Olsson for the paper titled "Combining Depth Fusion and Photometric Stereo for Fine-Detailed 3D Models".

SCIA and SSDL 2019 attracted significant industrial interest and were sponsored by: (Gold sponsors) Vironova and Visual Sweden, and (Silver sponsors) FLIR, IMINT, UNIBAP, SECTRA, the Analytical Imaging Diagnostics Arena (AIDA), Recorded Future, Tobii, and SICK Sensor Intelligence.





<https://iapr.org/gbr2019>

Co-Chairs:

Donatello Conte (Université de Tours, France)
Jean-Yves Ramel (Université de Tours, France)
Pasquale Foggia (University of Salerno, Italy)

GbR 2019 Proceedings
were published as Springer
LNCS Vol. 11510.

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



GbR 2019, the 12th in the GbR series, was sponsored by the International Association for Pattern Recognition (IAPR), and hosted by the Fundamental and Applied Computer Science Laboratory (LIFAT).

GbR is a workshop organized by the IAPR Technical Committee 15 (IAPR TC-15) on Graph Based Representations, which aims at encouraging research works in Pattern Recognition and Image Analysis within the graph theory framework. Numerous applications have been addressed with the help of graph-based representations, ranging from Image and Video Processing, to Social Networks analysis, Document analysis, Chemo-informatics and classification problems.

GbR2019 received 28 submissions from which 22 papers were accepted for presentation after peer review. 28 program committee members and 6 additional reviewers were invited to review the submissions. The accepted papers were presented in seven oral sessions, each paper given 30 minutes for presentation and discussion. Accepted papers mainly cover the following topics:

Graph Edit Distance, Graph Matching, Machine Learning for Graph problems, Network and Graph Embedding, Spectral Graph Problems, Parallel Algorithms for Graph Problems.

The program also included two very interesting invited talks: one by Christine Solnon, from the INSA of Lyon, entitled "Experimental Evaluation of Subgraph Isomorphism Solvers" and one by Marco Gori, from the University of Siena, entitled "Local Propagation in Graphical Neural Networks".

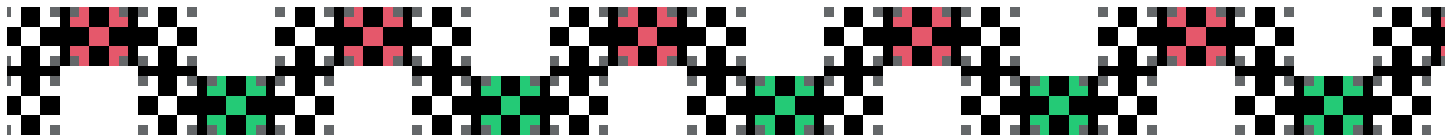
31 participants attended GbR2019, including 11 students.

The first day ended with a cocktail

welcome reception at the Library of the University of Tours, from where attendees were able to enjoy a great view of the city and the Loire river and to experience typical local food (cheeses) and wine degustation.

The social program was divided into two parts: a visit to one of the most famous castles in the Loire Valley, Chenonceau Castle, followed by dinner on a boat on the river on which the castle is built. Attendees discovered the Cher, a sinuous and romantic river that skirts forested and vine-covered slopes, right underneath the castle arches.

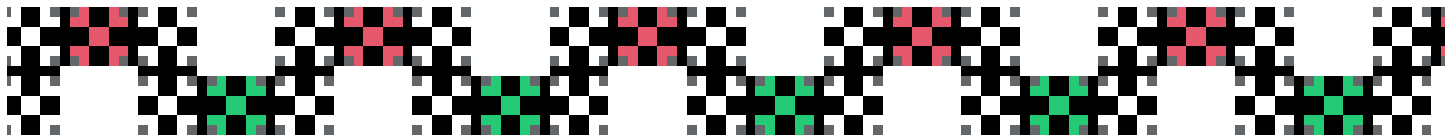




MCPR 2019

11th Mexican Conference on Pattern Recognition

June 26-29, 2019, Quéretaro, Mexico



Co-Chairs:

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

[José Francisco Martínez-Trinidad](#) (INAOE, Mexico)

[José Arturo Olvera-López](#) (BUAP, Mexico)

[Joaquin Salas](#) (Instituto Politécnico Nacional, Mexico)

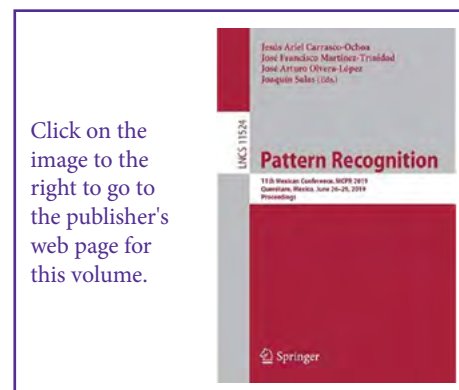
by The MCPR 2019 General Co-Chairs

The 11th Mexican Conference on Pattern Recognition (MCPR2019) was held at the Museo Regional de Querétaro (Querétaro, Mexico). The conference was organized by the Computer Science Department of the National Institute for Astrophysics Optics and Electronics (INAOE) and the Research Center on Applied Science and Advanced Technology (CICATA) of the National Polytechnic Institute (IPN) of Mexico. MCPR2019 was sponsored by the Mexican Association for Computer Vision, Neural Computing and Robotics (MACVNR) and the International Association for Pattern Recognition (IAPR).

MCPR2019 received contributions from 10 countries. In total 86 papers were submitted, out of which 40 were accepted for publication in the MCPR2019 proceedings and for presentation at the conference in a single track. The review process was carried out by the Scientific Committee, which consisted of 63 outstanding

researchers, all specialists of pattern recognition, who prepared an excellent selection.

The 40 accepted papers were published by Springer in the volume Pattern Recognition, LNCS 111524, edited by Jesus Ariel Carrasco-Ochoa, José Francisco Martínez-Trinidad, José Arturo Olvera-López and Joaquin Salas.



The oral sessions covered the topics: Artificial Intelligence Techniques and Recognition, Computer Vision, Industrial and Medical Applications of Pattern Recognition, Image Processing and Analysis, Pattern Recognition Techniques, Signal Processing and Analysis, and Natural Language Processing and Recognition.

Three outstanding invited speakers gave keynote addresses on topics in Pattern Recognition:

- Prof. Roberto Manduchi, Department of Computer Engineering, University of California at Santa Cruz, USA.
- Prof. Sertac Karaman, Laboratory of Information and Decision Systems, Massachusetts Institute of Technology, USA.
- Prof. Adolfo Guzman Arenas, Center for Computing Research, National Polytechnic Institute, Mexico.

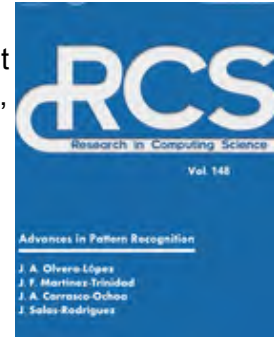
Additionally, on the last day of the conference, four distinguished researchers presented enlightening tutorials on several Pattern Recognition topics:

- Professor Angel Kuri Morales, Department of Computer Science, ITAM, Mexico.
- Professor Humberto Sossa, Center for Computing Research, National Polytechnic Institute, Mexico.
- Professor Edgar Roman Rangel, Department of Digital Systems, ITAM, Mexico.



- Professor Joaquin Salas, CICATA, National Polytechnic Institute, Mexico.

As in previous editions, the conference included a Postgraduate Students' Meeting that allowed the students to receive feedback from experienced researchers, as well as promoting their participation in conference events. Seven student papers were carefully selected to be presented at the Conference as posters, and these contributions were also published as a special issue of the journal *Research in Computing Science* edited by the National Polytechnic Institute of Mexico.



During the event, lunches were provided to the attendants at "San Miguelito" restaurant. And the Conference dinner took place at "Fin de Siglo" restaurant. Both located in the beautiful historic center of Queretaro near to the conference venue.

We are sure that MCPR 2019 once again provided a forum for enhancing the collaboration between Mexican Pattern Recognition researchers and the broader international Pattern Recognition community.

The steering committee for the MCPR decided that the 12th Mexican Conference on Pattern Recognition will be held in Morelia, Mexico, in the last week of June 2020, organized by the Faculty of Electrical Engineering of the Michoacán University of San Nicolás de Hidalgo and the Computer Science Department of the National Institute for Astrophysics Optics and Electronics of Mexico.





School Coordinator: Prof. Constantine Kotropoulos

The 1st EURASIP-GAIPDM Seasonal School on “Learning from Signals, Images, and Video” took place in Thessaloniki between July 15th and July 18th, followed by a daily excursion to Kavala the other day.

The daily schedule was:

- a morning 3-hour tutorial session split into two sessions by a coffee-break
- a long get-together lunch break,
- an afternoon session comprising an hour and a half hands-on-experience session, coffee-break, and a 4-hour hackathon session.

Two hackathons were offered, and attendees were asked to form teams of 3 to 4 persons and seek better solutions to given ones for several problems, under the guidance of the hackathon organizers.

The 1st Hackathon was organized by **Professor Constantine Kotropoulos** and his team (**Myrsini Ntemi, George Karantaidis, Ioannis Sarridis, and Emmanouil Gionanidis**) and addressed **Recommendation, Price Prediction, and Natural Language Processing Tools for Promoting Tourism Experience**. The 2nd Hackathon, organized by ITI Research Director **Dr. Ioannis Kompatsiaris** and his colleagues (**Dr. Symeon Papadopoulos, Dr. Markos Zampoglou, and Olga Papadopolou**), addressed **The Web Media Verification Challenge**.

The school was attended by 48 enthusiast young researchers. All attendees were senior undergraduate, M.Sc. students, and Ph.D. candidates from Greece, but one, Dr. Uddin Nasir came from Sweden. In particular, the attendees came from various universities around Greece, such as University of Patras, National Technical University of Athens, University of Ioannina, University of Western Macedonia located at Kozani, and University of Macedonia and Aristotle University both located at Thessaloniki.

The activities overwhelmingly enjoyed by the attendees were the hands-on experience sessions and the hackathons.

Photos can be found on Facebook:

<https://www.facebook.com/Summer-School-on-Learning-from-Signals-Images-and-Videos-539761346550661/>.

Lecturers and Presenters by day

Monday, July 15th

- **Petros Koutras** lectured on “**Multi-sensory Video Processing and Learning for Human-Robot Interaction**”, a tutorial prepared by his supervisor **Professor Petros Maragos** and himself. **Niki Efthymiou** assisted him in the hands-on experience session.

Tuesday, July 16th

- **Professors Ioannis Pitas, Nikos Nikolaidis, and Anastasios Tefas** lectured on “**Computer Vision and Machine Learning for Drone Cinematography**”. **Iason Karakostas** and **Paraskevi Nousi** contributed a hands-on experience session on this theme.

Wednesday, July 17th

- **CERTH/ITI Director Dr. Dimitrios Tzovaras** and **Dr. Anastasios Drosou** lectured on “**Modelling Material Degradation Phenomena for Cultural and Industrial Use-cases Using AI Techniques**”. **Dr. Drosou** and **Dr. Nikolaos Dimitriou** organized a hands-on experience session on this theme.

Thursday, July 18th

- **Professor Konstantinos N. Plataniotis** lectured on “**Image Processing and Machine Learning for Histopathology and Radiomics**” and “**Machine Learning in Engineering: Panacea or Deep Trouble?**”. The second lecture was open to the academic community, being part of the [Distinguished Lecturer Series “Leo the Mathematician](#)” of the School of Informatics. In the afternoon, we had the pleasure to host **Dr. George Vakaros**, (MLS Innovation Inc. VP of Business Development & Sales EMEA), who gave an industry perspective lecturing on “**Tracing Artificial Intelligence and Natural Language Processing Frontiers in Smartphone Industry: The Case of MLS Artificial Intelligence Center (MAIC)**”. **Christina Papanikolaou** demonstrated MLS solutions for smart home applications of Speech Technology offered by MLS Innovation Inc.

Friday, July 19th

- Excursion to **Kavala** (sightseeing, swimming, and dinner)

BOOKSBOOKSBOOKS



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

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

Happy reading!

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



New titles published by Springer:

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

- * **Selfie Biometrics** by Ajita Rattani et al. (Eds.): <https://www.springer.com/book/9783030269715>
- * **Deep Learning and Convolutional Neural Networks for Medical Imaging and Clinical Informatics** Le Lu et al. (Eds.): <https://www.springer.com/book/9783030139681>
- * **Video Verification in the Fake News Era** by Vasileios Mezaris et al. (Eds.): <https://www.springer.com/book/9783030267513>
- * **Human Activity Recognition and Behaviour Analysis** by Liming Chen and Chris D. Nugent: <https://www.springer.com/gb/book/9783030194079>
- * **Image Texture Analysis** by Chih-Cheng Hung, Enmin Song and Yihua Lan: <https://www.springer.com/book/9783030137724>
- * **Fundamentals of Image Data Mining** by Dengsheng Zhang: <https://www.springer.com/book/9783030179885>

And, these titles are due to publish very soon:

- * **Domain Adaptation for Visual Understanding** by Richa Singh et al. (Eds.): <https://www.springer.com/book/9783030306700>
- * **Handbook of Vascular Biometrics** by Andreas Uhl et al. (Eds.): <https://www.springer.com/book/9783030277307>
[Open Access]



New titles published by CRC Press:

Books for the remainder of 2019:

Advanced Environmental Monitoring with Remote Sensing Time Series Data and R by Alexandra Gemitzi, Nikolaos Koutsias, Venkat Lakshmi: <https://www.crcpress.com/Advanced-Environmental-Monitoring-with-Remote-Sensing-Time-Series-Data/Gemitzi-Koutsias-Lakshmi/p/book/9780367205270>

Books to be published in the first quarter of 2020:

* **Fundamentals of Satellite Remote Sensing: an Environmental Approach, Third Edition** by Emilio Chuvieco: <https://www.crcpress.com/Fundamentals-of-Satellite-Remote-Sensing-an-Environmental-Approach-Third/Chuvieco/p/book/9781138583832>



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

IEEE TRANSACTIONS ON

PATTERN ANALYSIS AND MACHINE INTELLIGENCE

Special Issue on Egocentric Perception

Important Dates

Submission period: January 1-30, 2020

Author Notification: May 5, 2020

Revised Papers Due: July 20, 2020

Final Notification: September 20, 2020

Full CfP at:

http://www.dmi.unict.it/farinella/CFP_PAMI_Special_Issue_on_Egocentric_Perception.pdf

Don't miss these important items in this issue:

[Discussion of the IAPR's Actions for Inclusivity](#)

[Conferences & Meetings Committee
Call for Bids to Host ICPR 2024](#)

[CfNs for Awards to be Presented at ICPR 2018:](#)

[K-S Fu Prize](#)

[J. K. Aggarwal Prize](#)

[Maria Petrou Prize](#)

[IAPR Fellow Awards](#)

[ICPR2020:
Call for Papers
and
Workshop and Tutorial Proposals](#)

Meeting and Education Planner

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

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

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

		Meeting	Report on previous edition	Venue
	NOV	PSIVT 2019 : 9th Pacific-Rim Symposium on Image and Video Technology	PSIVT 2017	Australia
		ACPR 2019 : 5th Asian Conference on Pattern Recognition	ACPR 2017	New Zealand
	DEC	RFMI 2019 : VIIIth Intl Workshop on Representation, analysis and recognition of shape and motion From Imaging data	RFMI 2017	Tunisia
		PReMI 2019 : 8th Intl. Conference on Pattern Recognition and Machine Intelligence	PReMI 2017	India
		MedPRAI 2019 : 3rd Mediterranean Conference on Pattern Recognition and Artificial Intelligence	MedPRAI 2018	Turkey
		DICTA 2019 : 2019 International Conference on Digital Image Computing: Techniques and Applications	DICTA 2018	Australia
	FEB	ICPRAM 2020 : 9th Intl. Conf. on Pattern Recognition Applications and Methods	ICPRAM 2018	Malta
	MAY	DAS 2020 : 14th IAPR Intl. Workshop on Document Analysis Systems	DAS 2018	China
	JUN	+ ICISP 2020 : 9th International Conference on Image and Signal Processing +	ICISP 2018	Morocco
		+ MCPR 2020 : 12th Mexican Conference on Pattern Recognition	MCPR 2019	Mexico
2020	SEP	ANNPR 2020 : 9th Workshop on Artificial Neural Networks in Pattern Recognition	ANNPR 2018	Switzerland
		ICFHR 2020 : 17th Intl. Conference on Frontiers of Handwriting Recognition	ICFHR 2018	Germany
		ICPR 2020 : 25th International Conference on Pattern Recognition	ICPR 2018	Italy
		+ IJCB 2020 : 4th International Joint Conference on Biometrics (IJCB is a triennial conference) +	IJCB 2017	USA



Thoughts on articles you've read in this issue of the IAPR Newsletter?

Ideas for features you'd like to see in the IAPR Newsletter?

Send your comments to:
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