

Winter 2001 Volume 23 No 1

Newsletter of the International Association for Pattern Recognition Inc (An affiliate member of the International Federation for Information Processing)

# LETTER FROM THE PRESIDENT Gabriella Sanniti di Baja

WOULD LIKE TO START BY THANKING THE IAPR GOVERNING Board for making me President. I'll do my best to deserve the confidence accorded to me. I feel very happy for the honour received; at the same time I am perfectly aware of the weight of the responsibilities involved in the leadership of IAPR. I have already had the honour and fortune of serving IAPR as chair of the Education Committee, 1991-1994, and as Secretary, 1994-2000, under the leadership of outstanding predecessors, Michael Duff, Jake Aggarwal, Josef Kittler, Bob Haralick, Edzard Gelsema and Horst Bunke. Working with them I have learned a lot and will try to use this experience to serve IAPR during my presidential term.

In the daily running of IAPR I will also take advantage of the help of an excellent Executive Committee team (Horst Bunke, Rangachar Kasturi, Henry Baird, Walter Kropatsch and Karl Tombre), that is already working in perfect agreement



t is my pleasure to inform that the process of appointing committee members is almost complete. A detailed list of all appointments is enclosed in this Newsletter issue. You will note that in addition to the Standing Committees, an ad hoc Advisory Committee has also been set up, with the task of giving advice, when necessary, on questions posed by the Executive Committee.

IAPR HAS GROWN SIGNIFICANTLY DURING THE LAST DECADE AND HAS NOW 37 MEMBER SOCIETIES AND AROUND 7500 individuals. One of the goals I would like to reach is increasing the number of Member Societies, especially from continents such as Africa, at the moment represented only by South Africa, and Central America. The Iberoamerican Forum on Pattern Recognition and Image Processing held immediately after the Barcelona ICPR might be a first promising step in this direction. Another goal that I hope to pursue is to stimulate researchers working on hot issues, where pattern recognition techniques can be profitably employed, to promote and form the relative Technical Committees. And I hope we will facilitate and improve communication between individual members and IAPR officers. In "From the ExCo" report, autumn issue of the Newsletter, you might have noted that for each Standing Committee an Executive Committee member has been appointed as Liaison Officer. We have also asked all societies with only one Governing Board member to provide us the name of a second contact person, so that we can contact her/him if we are unable to get direct response from the ExCo" report. Detailed information that the Executive Committee sends to Governing Board members on IAPR matters is expected to circulate to all individuals in the Member Societies.

I look forward to seeing you all at the end of my presidency, at 16th ICPR in Quebec City 2002. Meanwhile, please feel free to email me [gsdb@imagm.cib.na.cnr.it] if you have any suggestions or comments about how to make IAPR work better.



# WISH LIST

t doesn't do any harm to sit back and ask the fundamental question: what do we really want? You might find you have already got what you want in which case the list will have to be extended to include less attainable items such as good health, than the more security rather happiness and requirements like word pressing immediately processing software that doesn't use a self-opinionated paper-clip to give frequent and unwanted advice.

The best science fiction has often served the function of dramatising wish lists. The list is recast in the form of a scenario in which the wishes have already been granted and it is fascinating to look at yesterday's science fiction and to compare its predictions with today's reality. I vaguely recall an episode of an early space -based story (Startrek?) in which explorers discovered a slab of crystal which, when inserted in some sort of player device, caused a lengthy illustrated history of the planet's lost civilisation to be projected onto a screen, complete with talking heads. A prediction of a DVD?

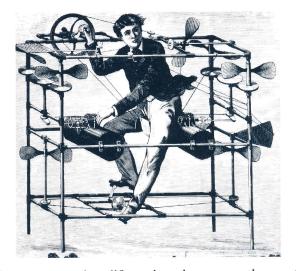
The speed of technological progress is now such that once a need has been articulated, it only takes a few years of research and development before the need is satisfied. My mother's generation (born at the start of the previous century) have watched the birth of face-toface discussions across from one side of the world to the other and air travel which has reduced the time taken to visit distant countries from months to hours. Homes are heated or food frozen at the touch of a button and pre-cooked food can be microwaved into edibility in seconds. Certain life threatening diseases have been eliminated but weapons of destruction have become so powerful that all the traditional means of defence have been rendered virtually useless. Geographical Position Systems can now tell us where we are to within a few metres and the mobile phone lets us speak to anyone at any time, anywhere (but preferably in a train, shouting as loud as possible).

Should IAPR have a wish list? The nature of public funding procedures tends to micro-manage research objectives so that the broader aims are obscured or lost; the research proposal focuses on the methodology, either practical or theoretical. We are in danger of

devoting all our effort into refining research tools rather than using them to good effect. Indeed, some of the best tools are only used to build further tools.

Are we in danger of losing sight of where we ultimately want to go? Perhaps a well thought out wish list would help us to develop a stronger sense of direction and a more effective use of our resources, both material and human.

With all this in mind, here are some suggestions. In medicine, we would like completely non-invasive diagnostic techniques and computer directed, even computer controlled, surgery. Health screening of many types still needs much higher capability and reliability. Making sense of the complex patterns in DNA should be a suitable challenge to our community.



In our everyday life, crime is apparently on the increase and there are too few police controlling our streets, We need more television surveillance and the ability to analyse scenes containing people with a view to checking faces against a database. The manufacturing industry has an almost insatiable need for automatic manufacture, assembly and inspection and much needs to be done here.

Looking further afield, the unpredictably of weather is presumably due to our inability to recognise the patterns of behaviour from one day to the next and the threat of global warming also comes into this area of large scale pattern recognition. The ever-present threat of global bombardment by large meteorites, the analysis of large scale land movements (which could lead to devastating tidal waves) and the tracking of warm ocean currents are all potential applications of our research.

So, at the start of a new millennium, this has to be a good time to draw up an IAPR wish list. Any suggestions?

# FROM



## The New Executive Committee

The main task of the new ExCo, in the months after ICPR in Barcelona, has been to set up the new standing committees, for this new term. According to IAPR's constitution and bylaws, two committees need a vote by the Governing Board. This vote is just over, and it is our pleasure to announce that the Governing Board has approved all the nominations suggested by the ExCo. In this issue, you will find the updated IAPR directory, with the names of nearly all the standing committee members. Please refer to the IAPR web pages for complete addresses. We are still missing some names for the Industrial Liaison Committee.

To improve communication between the ExCo and the member societies, we have asked all societies who have only one representative in the Governing Board to provide us with the name of a second contact person, whom we can contact if we are unable to get response from the GB member. All individual members of the national societies which are members of IAPR should know that information from the ExCo about IAPR matters is sent out regularly to the Governing Board, by The ExCo also emails to the GB members email. pointers on various scientific events and other information of interest to our community. If your GB representatives don't disseminate all this information if you never hear from them – don't hesitate to ask them for information!

## **In Memory of Edzard**

We are also working on plans to honour the memory of Edzard Gelsema. At this point, we have the pleasure to inform you that a special issue of PRL is planned; its guest editors will be Laveen Kanal, Arnold Smeulders and Gabriella Sanniti di Baja.

#### **Technical Committees**

Several Technical Committees have new chairpersons; you will find their names in the IAPR directory in this issue, with details on the IAPR web pages. We are still missing a new chair for TC8 on *Applications in Industry*; any suggestions to the ExCo are welcome. TC14 (*Image Processing*) sees its field of interest extended to include other kinds of signals, and is in the process of proposing a new name, to cover new topics. Once a new name is proposed, it will be submitted to approval by a GB vote.

#### **IAPR Publications**

There has been some discussion on the IAPR's publication policy. As you certainly know, there are currently three IAPR affiliated journals: *Pattern Recognition Letters, Machine Vision & Applications,* and *International Journal on Document Analysis and Recognition.* There is a general wish, both from the GB and from the ExCo, to keep this number of affiliated journals small, and to have a coherent affiliation policy. Some thoughts have also been given to the possibility for IAPR to publish itself the proceedings of ICPR and other IAPR sponsored conferences.

#### **OnLine Banking**

dministrative procedures can become cumbersome in an international organization where the executive committee members are located in several countries and even continents. To ease parts of these procedures, we have now set up online banking procedures. Other administrative matters which are being worked on are the possibility to acquire and maintain conference organization software which could be at the disposal of organizers of IAPR sponsored events, and the maintenance of a mailing list for sending out calls for papers and other conference information.

Finally, we all invite you to bookmark the web page for the next ICPR, which is available at the following address: www.icpr2002.gel.ulaval.ca



**Bad News & Good News** 

e were sorry to hear that K S Fu Prizewinner Theo Pavlidis was diagnosed on October 16 as requiring urgent surgical attention and that a quadruple bypass operation had to be performed two days later. The good news is that the operation was successful and that all that is now needed is care and rest for a few weeks.

Our best wishes to Theo for a full and quick recovery to his normal energetic self.



RECPAD 2000 11<sup>th</sup> Portuguese Conference on Pattern Recognition May 11-12 2000 Porto - Portugal

RECPAD2000 was the 11<sup>th</sup> Portuguese Conference on Pattern Recognition held in Porto, Portugal.

This edition was organised by INEB, the Institute for Biomedical Engineering and FEUP, the Faculty of Engineering of University of Porto, on behalf of APRP, the Portuguese Association for Pattern Recognition

The main goal of the conference was to bring together scientists from the Portuguese community and ease their contact with other specialists from other countries. The significant international participation helped the organising committee in achieving that goal. The conference was attended by 95 participants from nineteen countries.

Three invited lectures were given by outstanding experts: Prof Luis Borges de Almeida (Technical University of Lisbon, Portugal), Dr Charilaos Christopoulos (Ericsson, Sweden), and Prof Max Viergever (University of Utrecht, Netherlands).

The main fields covered in the conference were: Pattern Recognition, Face Detection and Recognition, Image Signal and Image Computer Vision, Analysis, Processing, Medical Applications, and Mathematical Morphology. 64 full papers were published in the conference proceedings together with 18 extended abstracts. The contributions came from 21 different countries. Most of the papers were reviewed by three referees from an international scientific panel of experts The full papers and abstracts were in the field. published in the Conference Proceedings book and in a CD-ROM. Selected papers will also appear in a special issue of Pattern Recognition Letters.

On the day before the conference a workshop on "Combining Multiple Decisions in Pattern Recognition and Adaptive Systems" was organised. Three invited lectures were given by experts in the field: Dr Belur Dasarathy (Dynetics, Inc., USA), Professor Josef Kittler (University of Surrey, United Kingdom) and Professor Mohamed Kamel (University of Waterloo, Canada).



Different social events were also organised: a reception on the Crystal Palace Rose Garden, the conference banquet, and a special tram trip, (shown above) that was an excellent opportunity to admire the beautiful Porto seaside and the sunset on the sea. On the day after the conference a tour around Minho, the Northwestern region of Portugal, drove the participants to its greenlands, beautiful coasts and unforgettable tastes. All of these social events had contributed to the success of the conference.

The next RECPAD conference will be held in the University of Aveiro, in 2002. Our best wishes to the conference organisers.

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Ana Maria Mendonça (amendon@fe.up.pt)

INEB – Instituto de Engenharia Biomédica, Faculdade de Engenharia da Universidade do Porto, Portugal

MCS 2000 First International Workshop on Multiple Classifier Systems June 2000 Cagliari - Italy



Ver the past decade or so, there has been a growing interest in the theory and application of multiple classifier systems. This interest has developed in several diverse, but related research communities (neural networks, pattern recognition, machine learning and statistics). The purpose of this workshop was to bring together researchers from the different communities to exchange ideas and results and to identify areas of common research interest.

This workshop covered research in many aspects of classifier systems including ensemble multiple construction, techniques for combining classifiers and applications (www.diee.unica.it/mcs/). It also sought to identify priorities for future research by setting up working groups to look at theory. three methodological/technical issues and applications.

The workshop comprised five invited talks and seven sessions. The first invited talk was presented by Thomas Dietterich on 'Ensemble methods in machine He approached the problem from the learning'. machine learning viewpoint. The specific question he addressed was how to construct a good set of classifiers. He described three approaches to constructing ensembles: 1) Bayesian voting; 2) accuracy/diversity methods (which include bagging as an example); 3) directly fitting an ensemble (adaboost algorithm).

Some experimental studies were reported. Bob Duin reported on 'Experiments with classifier combining rules'. He considered two ways of combining: 1) different classifiers on a given feature set; 2) classifiers of the same type on different feature sets. Amanda Sharkey ('The 'test and select' approach to ensemble combination') asked why and how to combine and considered 1) ensemble methods (creating a set of neural networks) and 2) modular methods. She reported various case studies, including engine

V. Govindaraju's talk ('A survey of monitoring. sequential combination of word recognisers in handwritten phrase recognition at CEDAR') covered a practical application of classifier combination in real use with the US postal services. In reality, the classifiers are applied sequentially (similar to sequential decision fusion), but if all classifiers do not accept (or reject clearly) then a combination scheme is employed. Finally, Ching Suen ('Multiple classifier combination for different output levels') reviewed different combination approaches (different levels) with applications and identified future studies and challenges.

The seven contributed sessions included papers addressing theoretical issues; a session on multiple classifier fusion; boosting and bagging; the design of multiple classifier systems; three practical sessions on remote sensing data analysis, document analysis and miscellaneous applications. The working groups met during coffee breaks and identified some topics for further investigation.

This proved to be a very useful and informative workshop covering many aspects of pattern recognition. Although many of the issues raised are perennial ones in statistical pattern recognition, the notion of combining an ensemble of models (perhaps models poorly matched to the problem at hand – Nathan Intrator gave a good example), to give improved (in some sense) performance is an important one. Many fruitful areas for research were identified. A second workshop has been proposed for 2001 in the UK.

## **Ref:** Multiple Classifier Systems:

J. Kittler and F. Roli (editors) Lecture Notes in Computer Science **1857** Springer Verlag, Berlin, 2000.

# **MEMBERS OF THE GOVERNING BOARD**

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For full contact details of the Governing Board and all committees please check: www.iapr.org

## **STANDING COMMITTEES**

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**IFIP Representative** Dr H S Baird

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**Advisory Committee** Professor M J B Duff Professor H Freeman Professor S L Tanimoto

Chair

# **TECHNICAL COMMITTEES**

General Chair - Professor R Kasturi

#### Name

- Statistical Pattern Recognition Techniques Structural & Syntactical Pattern Recognition Neural Networks & Machine Learning Computer Vision & Image Understanding
- TC5 Benchmarking & Software
- TC6 Special Hardware and Software Environments
- TC7 Remote Sensing and Mapping

#### TC8 To be announced

TC1

TC2

TC3

TC4

- TC9 **Biomedical Applications**
- **TC10** Graphics Recognition
- **TC11** Applications in Text Processing
- **TC12** Multimedia Systems
- **TC13** Pattern Recognition in Astronomy & Astrophysics
- **TC14 Image Processing**
- **TC15** Graph Based Representations
- Algebraic & Discrete Mathematical Techniques in **TC16**
- Pattern Recognition & Image Analysis

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Professor dr ir M A Viergever Professor Young-Bin Kwon Professor S-W Lee Dr L Schomaker Dr C H C Leung Professor F Murtagh Professor J Bigun Professor J-M Jolion

Professor A P Nemirko

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# The 1st International Workshop on Pattern Recognition for Remote Sensing (PRRS) Sponsored by IAPR-TC7 Andorra la Vella, Andorra September 1, 2000

For many years Pattern Recognition found a fertile ground of applications in Remote Sensing. A large number of Pattern Recognition scientists at some stage in their career found themselves dealing with cloud detection or pixel classification in remote sensing images. However, as Earth observation satellites proliferated, and as images coming from their sensors starting filling up filing cabinets, overflowing, filling up rooms, overflowing and filling up buildings, the processing of these images created its own large fora of expression like major international conferences where thousands of people go, and its own community of researchers quite distinct from all others.

Pattern recognition also moved in all sorts of directions, encompassing a range of applications and a range of methodologies. Remote sensors still use pattern recognition techniques and Pattern Recognition people still demonstrate their ideas using remote sensing applications, but there are very few people who nowadays keep a foot in both camps. Among all this fragmentation, the first workshop on Pattern Recognition for remote sensing made a timid attempt to bring the two communities together.

The workshop was organised by the Technical Committee for Remote Sensing (TC7) and it was cosponsored by the IEEE Geoscience and Remote Sensing Society. It took place in Andorra, a Principality on the top of the Pyrenees, between Spain and France, about two hundred kilometres from Barcelona and Toulouse. Several of the participants met coincidentally at the Andorra bus stop of Barcelona airport. The bus journey took just over 3 hours, among breathtaking scenery of the Pyrenean landscape.

The venue was the Crowne Plaza Hotel in La Vella with excellent facilities and very helpful staff. The workshop was attended by 16 people. It is not a bad number given that it was just a single day meeting with 12 speakers only, and it was the first attempt of this sort to strengthen and renew the links between the two communities.

The organisers are now planning the next workshop, on August 16 2002, near Niagara Falls, just after the end of ICPR 2002 which takes place in Quebec between August 11 and 15.

The workshop proceedings were published by BMVA Press (ISBN 1 901725 12 X). To obtain a copy please send an email to: m.petrou@eim.surrey.ac.uk

A special issue of the Pattern Recognition Letters with papers from the workshop is planned for later this year.

#### Maria Petrou, TC7 chairman



#### **19 FEBRUARY 2001**

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# TIME TO PREPARE FOR 16th ICPR in QUEBEC CITY



After the success of ICPR 2000 in Barcelona, it is already the time to prepare for the next ICPR that will take place in Quebec City on August 11-15, 2002.

## **QUEBEC CITY**

is an ideal location for ICPR. The Conference Organising Committee is very enthusiastic in inviting you to attend the conference and to enjoy your stay in Quebec City. Quebec, with its French culture and European tradition, is recognised as a unique city with beautiful scenery, excellent food, and exceptional quality of living. Ouebec is Canada's number one rated city for affordable lodging costs and value for the money. In addition, it is a very safe city with a low crime rate.

#### **THE QUEBEC CITY CONVENTION CENTER**

is a state of-the-art facility located in the heart of Quebec City, just outside the walls of the historic old town. The Centre is directly linked to the two hotels of the conference, the Hilton Quebec and the Radisson Hotel des Gouverneurs. The Centre is within walking distance of hundreds of stores and **JEAN-LESAGE INTERNATIONAL AIRPORT** boutiques, restaurants, parks, museums, sightseeing attractions.

#### **ICPR 2002 ORGANISING COMMITTEE**

General Chair: General Co-Chair, Technical Program: General Co-Chair, Sponsorship and Publicity: Chair, Tutorial and Demos: Chair, Local Arrangements:



and is located 16 km from downtown and within a 15-20 minute ride of the Convention Center and Hotels.

Dr Ching Suen, Concordia University, Canada Dr Rangachar Kasturi, Penn State University, USA Dr Réjean Plamondon, École Polytechnique, Canada Dr Denis Poussart, Université Laval, Canada Dr Denis Laurendeau, Université Laval, Canada

#### THE CONFERENCE TECHNICAL PROGRAM CONSISTS OF FOUR PARALLEL TRACKS

Track 1: Computer Vision and Robotics Track 2: Pattern Recognition, Neural Networks, and Document Analysis Track 3: Image and Signal Processing Track 4: Biomedical and Multimedia Applications

## **IMPORTANT DATES**

First Call for Papers: Deadline for tutorial submission: Deadline for paper submission: Notification of acceptance: Camera-ready papers:

August 2001 December 2001 December 2001 March 2002 May 2002



**ICPR 2002 QUEBEC CITY** 

c/o Agora Communication, 2600 boulevard Laurier, Tour Belle Cour, suite 2680, Sainte-Foy, Quebec, Canada GIV 4M6 Electronic paper submission is encouraged and will be supported by a www site

#### **USEFUL ADDRESSES**

ICPR 2002 Web page address: ICPR 2002 e-mail address: Quebec City Touristic Information: Quebec City Convention Center: Hotel Radisson Gouverneurs: Hotel Hilton Quebec:

www.icpr2002.gel.ulaval.ca icpr2002@gel.ulaval.ca http://www.quebecregion.com http://www.convention.qc.ca http://www.radisson.com/quebeccityca http://www.hilton.com/hotels/YOBHITW/index.html

# FORTHCOMING SPONSORED CONFERENCES

# 9<sup>th</sup> International Conference on Computer Analysis of Images & Patterns CAIP 2001 5 - 7 September 2001 Warsaw Poland

The CAIP conference is a traditional European conference devoted to all aspects of computer vision, image analysis, pattern recognition and related fields. The scientific programme will consist of plenary lectures by invited speakers, contributed papers presented in two parallel sessions and posters. Proceedings will be published by Springer Verlag in the series Lecture Notes on Computer Science (LNCS) and will be distributed to participants at the meeting.

Authors are invited to submit papers of various flavour including mathematical, algorithmic, methodological and practical aspects on the following topics:

- image analysis
- compute vision
- pattern recognition
- medical imaging
- motion analysis
- network centric vision
- augmented reality
- image & video compression
- industrial applications

**Submit** five copies of a paper no longer than 10 pages (excluding title pages) with two title pages; the 1<sup>st</sup> with title, author's name, affiliation, address, tel, fax, email and abstract of 200 words and keywords; the 2<sup>nd</sup> should contain only title, abstract and key words. LATEX template for camera-ready version will be available on the conference home page.

**On a separate page** answer the following three questions:

- a) what is the original contribution?
- **b**) what is the most similar work?
- c) why is their work relevant to others?

#### **Further details:**

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Abstract deadline:15/02/2001Camera ready paper15/05/2001

4<sup>th</sup> International Workshop on Graphics Recognition GREC2001 7 – 8 September 2001 Kingston, Ontario Canada

GREC 2001 is a single-track two day workshop on methods and systems for graphics recognition - a branch of document image analysis that focuses on the recognition of two-dimensional notations such as engineering drawings, maps, music notation, tables and chemical structure diagrams. The meeting will be held just preceeding ICDAR 2001 (details opposite).

The format of the workshop will follow the tradition of preceeding GREC meetings and attendance will be limited to 80 participants all of whom are asked to make a written contribution to the conference proceedings. After the workshop the revised versions of selected papers will be published as an LNCS volume by Springer Verlag.

Any topic related to the subject is welcome and includes (but is not limited to):

- recognition of primitives:
  - rastor-to-vector conversion
  - recognition of symbols in diagrams
- separation of symbols and text in diagrams
- interpretation of drawings, maps, charts etc
- analysis of line drawings, tables & forms
- interpretation of low level ('dumb') CAD data
- description of complete systems
- performance evaluation

**Submit** an abstract which can be as short as half a page or as long as a full research paper of 4/5 pages. Established researchers are welcome to submit abstracts on any relevant topic including descriptions of work in progress, critiques of the state of the art and proposals for future research directions. Researchers new to graphics recognition are asked to describe why they have become interested in this area.

**Abstracts** will be lightly reviewed and will be used as a basis for choosing session topics and the final manuscripts may be from half a page to 15 pages.

#### Further details:

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Abstract deadline:01/03/2001Camera ready paper:15/06/2001

# ALWAYS CHECK WEB SITES FOR UP-TO-DATE DETAILS

Sixth International Conference on Document Analysis and Recognition 10 – 13 September 2001, Seattle USA ICDAR'01

This conference is an international forum for furthering the state of the art in document recognition, understanding, management and retrieval, including multimedia documents. It brings together researchers and practitioners from divergent fields such as Computer Vision, Pattern Recognition, Machine Learning and Information Retrieval, to identify important problems, explore novel applications and exchange ideas for developing robust solutions. The topics of interest include, but are not limited to:

*Performance Metrics* Tools, Methodology, Public Datasets, Interchange Formats, Degradation Models, Metrics for logical structure analysis, document retrieval, text recognition, graphics recognition

*Text Recognition* Recognition and retrieval of noisy documents, Segmentation-free approaches incorporating linguistic analysis, Color and greyscale algorithms, Combining multiple knowledge sources, Bootstrapping, Use of domain-specific knowledge, Latin and non-Latin Multilingual documents, Language identification, Description of complete systems

*Handwriting Recognition* Cursive Handwritten characters and symbols, Pen-based Signature verification, Drawings and gestures, Psychophysical models

**Document Image Processing** Noise filters, Characterizing image quality, Image enhancement, Color and greyscale, Fax, low-res Segmentation Techniques (Text/graphics, foreground/background separation, etc.)

*Graphics Recognition* Raster-to-vector techniques, Recognition of graphical primitives, Symbol recognition, Analysis of maps, line drawings, tables, forms, etc.

**Document Understanding** Detection of logical objects and logical structure, Semantic analysis, Article detection, Layout analysis, Use of domain-specific knowledge, Conversion to structured formats, such as XML, SGML, HTML, MSWord

**Document Databases** Document similarity, Genre detection, Document summarization, Duplicate document detection, Indexing and retrieval, Information extraction, Security

*Multimedia Documents* Indexing, retrieving, categorizing, summarizing, and visualizing multimedia content, including video, photos, graphics, sound, and

text, Multimedia digital libraries, Research and development environments

**Document Analysis Research and Development Environments** Hardware and software architecture, Software packages and tools, Tools, System architectures, Methodology, Lessons learned in developing complex systems

*Applications* Digital libraries, multimedia, web, forms, financial, postal, medical, music, Customer profiles and requirements, Description of complete systems

#### Submission details:

Manuscripts submitted for review shall be 12 pt double spaced and be in A4 or letter size. All submissions must be in Portable Document Format (.pdf), preferably, or PostScript (.ps). They must be uploaded to the ICDAR program committee page http://icdarO1.loria.fr/

#### **Further details:**

Robert M. Haralick, City University of New York, USA Email: haralick@ee.washington.edu http://isl.ee.washington.edu/IAPR/ICDAR01

Abstract deadline:	15/02/2001
Camera ready paper	30/06/2001



Gabriella Sanniti di Baja celebrated her new appointments as President of IAPR and PRL Editor at a party held at the Instituto di Cibernetica, Naples on 12 October where food and drink were generously provided. It was an opportunity to mingle with colleagues from the Institute, from the University and to meet some international guests. Here Gabriella is seen talking to Professor Luigi Cordella. The views presented in this newsletter represent the personal views of the authors and not of their host institutions nor of IAPR

	May 2002	<b>Final Manuscript</b>	Canada	Pattern Recognition	16 ICPR
www.icpr2002.gel.ulaval.ca	December 2001	Abstract	Quebec City	00	11-15 Aug
				16 <sup>th</sup> International Conference	* 2002 *
http://isl.ee.washington.edu/IAPR/ICDAR01	30/06/2001	Final Manuscript	USA	Document Analysis	ICDAR'01
Fax: +1 206 543 3842 haralick@ee.washington.edu	15/02/2001	Abstract	Seattle	6th International Conference on	10-13 Sept
http://www.cs.queensu.ca/grec2001	15/06/2001	Final Manuscript	Canada	Workshop on Graphics Recognition	GREC'01
blostein@cs.queensu.ca	01/03/2001	Abstract	Kingston, Ontario	Fourth IAPR International	7-8 Sept
http://tiger.ire.pw.edu.pl/caip	15/05/2001	Final Manuscript	Poland	Computer Analysis of Images	<b>CAIP 2001</b>
Fax: +48 22 825 52 48 w.skarbek@ire.pw.edu.pl	15/02/2001	Abstract	Warsaw	9 <sup>th</sup> International Conference on	5-7 Sept
http://red.lx.it.pt/~emmcvpr	31/05/2001	Final Manuscript	France	Energy Minimization	EMMCVPR
Marie-Helene.Zeitoun@sophia.inria.fr	03/02/2001	Abstract	Sophia Antipolis	Third International Workshop on	3-5 Sept
http://www.members.aol.com/ibaiperner/mldm2.htm	15/05/2001	Final Manuscript	Germany	and Data Mining in PR	MLDM'01
ibaiperner@aol.com	01/03/2001	Abstract	Leipzig	Int Workshop on Machine Learning	25-27 July
www.iceis.org	05/04/2001	Final Manuscript	Portugal	in Information Systems	WPRIS
Fax: +351 21 841 8472 afred@lx.it.pt	10/01/2001	Abstract	Setubal	Workshop on Pattern Recognition	6-7 July
http://www.diee.unica.it/mcs	15/03/2001	Final Manuscript	UK		MCS'01
Fax: +44 (0)1483 259554 j.kittler@ee.surrey.ac.uk	01/02/2001	Abstract	Cambridge	Multiple Classifier Systems 2001	2-4 July
http://www.his.no/scia2001/	19/03/2001	Final Manuscript	Norway	Image Analysis	SCIA'2001
Fax: +47 5183 1750 Ivar.Austvoll@tn.his.no	Deadline passed	Abstract	Bergen	12th Scandinavian Conference on	11-14 June
http://www.hh.se/avbpa	10/4/2001	Final Manuscript	Sweden	Person Authentication	AVBBPA
avbpa@hh.se	15/01/2001	Abstract	Halmstead	Audio & Video Based Biometric	6-8 June
http://amalfi.dis.unina.it/iwvf4/	15/02/2001	Final Manuscript	Italy	Visual Form	IWVF4
Fax: +39 0815267 654 iwvf4@imagm.cib.na.cnr.it	Deadline passed	Abstract	Capri	4th International Workshop on	28-30 May
amalfi@dis.unina.it/gbr2001	15/04/2001	Final Manuscript	Italy	Representations	<b>GBR'2001</b>
gbr@amalfi.dis.unina.it	Deadline passed	Abstract	Ischia	3rd Workshop Graph Based	23 -25 May
http://www.bas-net.by/iec/conferen.htm	Deadlines passed		Belarus	and Information Processing	<b>PRIP'2001</b>
prip@newman.bas-net.minsk.by			Minsk	6th International Conference on PR	15-17 May
http://www.utp.br/icapr2001	Deadlines passed		Brazil	Advances in Pattern Recognition	<b>ICAPR '2001</b>
Fax: +44 1392 264066 espaa@essex.ac.uk			Rio de Janeiro	International Conference on	11-14 March
http://www.tcs.auckland.ac.nz/~robvisO1	Deadlines passed		New Zealand		RobVi'01
Fax: +64 9 373 7001 r.klette@auckland.ac.nz			Auckland	Robot Vision 2001	16-18 Feb
Contact	Deadlines	Dear	Location	Event	2001
2		,	4	1	



# FORTHCOMING IAPR CONFERENCES WORKSHOPS AND EVENTS Check updated information on: http://www.iapr.org