

IAPR



# Newsletter

Volume 33, Number 3  
July 2011

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## ***Calls for Papers***

### [ICB2012](#)

*5th International Conference on Biometrics*  
New Delhi, India  
Deadline: September 15, 2011  
March 30-April 1 2012

### [DAS 2012](#)

*10th IAPR International Workshop on  
Document Analysis Systems*  
Gold Coast, Queensland, Australia  
Deadline: September 30, 2011  
March 27-29 2012

### [ICFHR 2012](#)

*13th International Conference on  
Frontiers in Handwriting Recognition*  
Bari, Italy  
Deadline: February 28, 2012  
September 18-20, 2012

### [ICPR 2012](#)

*21st International Conference on Pattern Recognition*  
Tsukuba Science City, Japan  
Deadline: March 31, 2012  
November 11-15, 2012

### [K.S. Fu Prize](#)

*To be presented at ICPR 2012*  
Deadline: April 6, 2012

### [J.K. Aggarwal Prize](#)

*To be presented at ICPR 2012*  
Deadline: April 11, 2012

## ***Call for Submissions***

### ***IAPR Newsletter***

*Articles, announcements, book reviews,  
conference and workshop reports*

Contact the editor:

Alexandra Branzan Albu, [aalbu@ece.uvic.ca](mailto:aalbu@ece.uvic.ca)

**Deadline: September 16, 2011**

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The logo for the IAPR Newsletter. It features the acronym "IAPR" in a bold, sans-serif font, with a circular emblem containing a stylized globe or network pattern to its right. Below "IAPR" is the word "Newsletter" written in a large, elegant, cursive script.

Published in association with the  
IAPR website, [www.iapr.org](http://www.iapr.org)

#### ***IAPR Newsletter* Publication Schedule:**

The IAPR Newsletter is published four times per year  
during the third week of January, April, July, and October.

# Getting to know...Herbert Freeman, IAPR Fellow



By Herbert Freeman, IAPR Fellow (USA)

*Dr. Herbert Freeman, IAPR Fellow  
ICPR 1994, Jerusalem, Israel*

*For outstanding contributions in image analysis and  
map data processing and leadership in the IAPR*

I first heard of the term “pattern recognition” during my one-year visiting professorship at MIT during 1958. It was from an article by G. P. Dinneen that had appeared in the proceedings of the *Western Joint Computer Conference* in 1955. While at M.I.T. my attention was called to the problem of describing line drawings on a digital grid. This led to my formulating the *chain code*, which subsequently gained wide acceptance. After joining the faculty at New York University in 1960, and with the help of various PhD students, I continued to expand application of the chain code and also to explore its usefulness in pattern recognition. One of the first articles dealing with this topic was presented by me at a conference in Namur, Belgium in 1961 and published in their conference proceedings. As a result of that work, I was invited to participate in what was probably the first dedicated pattern recognition conference, the conference held in Puerto Rico in the fall of 1966. This was followed with an invitation to attend a wonderful NATO-sponsored workshop in pattern recognition, organized by Antonio Grasselli of the University of Pisa, Italy, in the summer of 1968. Grasselli invited participants from every corner of the world, and the workshop, together with the proceedings published by Academic Press in 1969, can be said to have laid a solid foundation for the future development of this field.

**Herbert Freeman** received his B.S.E.E. degree from Union College, Schenectady, NY (1946) and his Masters (1948) and Dr.Eng.Sc. degrees from Columbia University (1956). From 1948 through 1960 he was employed by the Sperry Corporation, where he designed the company's first digital computer, the SPEEDAC, which was completed in 1953. In 1960 he joined the faculty of the Electrical Engineering Department at New York University, becoming chairman of the department in 1968. From 1975 through 1985, he was professor and director of the Image Processing Laboratory in the Electrical, Computer and Systems Engineering department at Rensselaer Polytechnic Institute, in Troy, NY. Since 1985 he has been State of New Jersey Professor of Computer Engineering at Rutgers University in Piscataway, NJ, where he also served as the first Director of the Center for Computer Aids for Industrial Productivity, a university-industry-government collaborative research center.

*(Continued on page 4)*

The next great step in pattern recognition took place at a meeting at Airlie House in Virginia in 1972. The purpose of the meeting, arranged by King-Sun Fu and Azriel Rosenfeld, was to organize a regular biennial conference dealing specifically with this field. Such a conference series already was in existence for artificial intelligence (AI) and there were voices that felt pattern recognition was merely a sub-field of AI. However, at Airlie House it was decided that pattern recognition was distinct from AI and that it should have its own biennial

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conference series, preferably in years alternating with those of the AI community. So as not to delay the process unduly, the "First International Joint Conference on Pattern Recognition" was set for Washington DC in 1973, with subsequent conferences to be held in 1974 and biennially thereafter. Because of my previous experience in working with IFIP (the International Federation for Information Processing) in which I had been active since 1962 and even had become program chairman of the IFIP World Computer Congress held in Stockholm, Sweden, in 1974, I argued strongly that the pattern recognition community should also form an international organization. The concept for such an organization was approved at the 1974 meeting, and Professor C.J.D.M. Verhagen of the Netherlands and I took on the task of formulating a constitution for the organization. I also arranged to have the organization officially incorporated under the laws of New York State and be approved as being eligible for tax-deductible donations under the laws of the United States. Professor King-Sun Fu of Purdue University became the first president of IAPR and I was elected as the first treasurer. In 1978, at the IAPR meeting in Kyoto, Japan, I was elected president for the term 1978-1980. In 1980, Prof. Azriel Rosenfeld was elected president. I was again chosen to be treasurer in 1982, then holding that office for the next three successive terms, till 1988.

I continued to be active also in IFIP and became aware of a movement in IFIP to organize a technical committee dealing with the subject of pattern recognition. To avoid competition between IFIP and IAPR on this topic, I convinced IFIP to invite IAPR to be an "affiliate member", a concept IFIP subsequently expanded to a number of other technical areas. IAPR accepted the IFIP invitation and asked me to be the first IAPR representative

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Among some of his significant technical contributions are the invention of the *chain code* for line-drawing representation (commonly known as the "Freeman chain code"), the concept of *characteristic views* in machine vision, and the development of high-quality automated cartographic text placement technology. In 1994, the International Association for Pattern Recognition awarded him its K.S.Fu prize "for his pioneering contributions to the representation and analysis of line drawing data," and in 1996, the University of Pavia, Italy, honored him with its *Medaglia Teresiana* award for his contributions to the field of pattern recognition.

Dr. Freeman has held visiting positions at various international academic settings in addition to having served as a founding member, Chairman, President, and Fellow of numerous prominent committees and associations. He is the author or editor of seven books and has published more than 120 articles in the technical literature. In 1997 he founded a company, MapText, devoted to the automated labeling of map features. The company was sold in 2005 and he has been in retirement since that time.

to IFIP, a position I gladly accepted and in which I served for many years.

The death of Professor King-Sun Fu in 1985 at the age of 55 was great loss to all of us. I was the IAPR treasurer at the time and I got the Governing Board to approve the creation of an endowment, the income of which would fund a prize to be named in his honor and awarded biennially. The [K.S. Fu Prize](#) was to be for pattern recognition what the Nobel prize in physics is for physics. The Fu family donated a significant sum, as did some companies as well as a number of others who had

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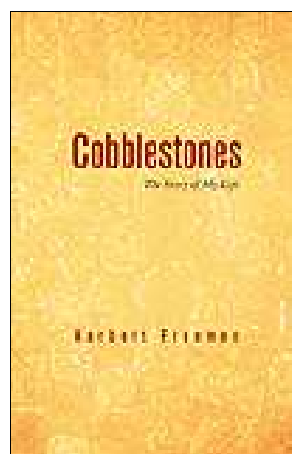
known Professor Fu and knew of his many contributions to IAPR and the pattern recognition community.

In 1994, at the IAPR International conference in Jerusalem, I had the honor of being awarded the King-Sun Fu prize for my work with the chain code, and had the additional honor of being made a [“Fellow” in IAPR](#). I have had the privilege of attending every IAPR international conference through 2004, including the two “Joint conferences” that were held prior to the formal founding of IAPR, and am probably the only individual who can make such a claim. In 2004, at the conference that year held in Cambridge, England, I realized that I knew fewer and fewer of the attendees—and fewer knew me. Many of my friends and colleagues from the early days of IAPR had either withdrawn or passed away, and it was time for me also to let younger people take over. There is a time for everything and nothing lasts forever.

In terms of my own work, it was focused on line drawings. In the early 1960s the emphasis was on the representation of line drawing data, the matching of line patterns (e.g., coast lines), the solution of jigsaw puzzles solely on the basis of the shape of the pieces, and on the automatic recognition of automobile license plate numbers. In the late 1960s and the early 1970s more emphasis was placed on three-dimensional structures—solution of the so-called “hidden-line” problem—and matching of three-dimensional objects by means of their *characteristic views*. Over the years my attention shifted toward maps (geographic) data. Together with a colleague from Italy I organized a workshop on map data processing in 1979. During that workshop my attention was called to the difficulty of properly placing the names of map features so that there

would be no overlap of names and no ambiguity as to the feature with which the name was to be associated. This led to many publications and finally to the forming of a company, MapText, Inc., dedicated to automatic text placement for maps. The company was bought by a large international company in 2005, and I began my retirement.

My first task was to write my memoir – my autobiography entitled [Cobblestones](#) and published by Xlibris in 2009. During 2009 and 2010 I served as chairman of the IAPR Advisory Committee and updated the IAPR history originally prepared by Professor Verhagen. Now I am busy with writing an occasional article, keeping in contact with former colleagues, and looking back on a most satisfying and privileged life.





## News from the **IAPR EXECUTIVE COMMITTEE**

by Ingela Nyström (Sweden)

Uppsala July 8, 2011

This time of the year, we experience lots of light in Sweden. The evenings are long, the nights are short, and the morning light arrives early. Many of us take a well-earned Summer vacation during July and/or August to enjoy the light and return refreshed to teaching and research in Fall. In fact, that is what I do with my family.

Between ICPRs the Executive Committee has one physical meeting. We will meet on August 8-9 at Past-President Professor Brian Lovell's lab in Brisbane, Australia. On our agenda is to check the status of the Standing and Technical Committees by reading interim reports that the respective Chairs have sent us and review the financial situation (e.g., by checking the membership dues). We will also discuss the scholarship program proposed at the Governing Board meeting in Istanbul last year. Of course, progress of the upcoming ICPR in Tsukuba is also on the agenda. Hence, we will have a busy two-day meeting in order to cover all the items.

This edition of the Newsletter contains, among other topics, three calls for nomination: the prestigious [King-Sun Fu Prize](#), which is seen as the Nobel Prize of our field; the [J.K. Aggarwal Prize](#), which is intended for young scientists; the [IAPR Fellow Award](#), which is for scientists with distinguished contribution to our field and to IAPR.

Please, visit the IAPR webpage [www.iapr.org/](http://www.iapr.org/) regularly. Thanks to the IAPR webmaster Edward Sobczak, who updates our website continuously.



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# BOOKSBOOKSBOOKS

Book reviews previously published in the IAPR Newsletter

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*Handbook of Geometric Computing* by Eduardo Bayro Corrachano (Ed.) (reviewed in this issue)

*Essential Image Processing and GIS for Remote Sensing* by Jian Guo Liu and Philippa Mason (reviewed in this issue)

*Handbook of Pattern Recognition and Computer Vision, 4th Edition* by C.H. Chen (reviewed in this issue)

*Multi-Sensor Data Fusion with MATLAB* by Jitendra R. Raol Apr '11

*Embedded Computer Vision*, Series: *Advances in Computer Vision and Pattern Recognition* by Branislav Kisacanin, Shuvra S. Bhattacharyya, and Sek Chai (Eds.) Apr '11

*NETLAB: Algorithms for Pattern Recognition Series: Advances in Computer Vision and Pattern Recognition* by Ian T. Nabney, Jan '11

*Image Processing: the Fundamentals, 2nd Edition* by Maria Petrou and Costas Petrou, Jan '11

*Progress in Pattern Recognition, Series: Advances in Pattern Recognition*, by Sameer Singh and Maneesh Singh, Editors, Oct '10

*Algebraic Geometry and Statistical Learning Theory* by Sumio Watanabe, Jul '10

*Statistical Learning and Pattern Analysis for Image and Video Processing* by Nanning Zheng and Zianru Xue, Jul '10

*Augmented Vision Perception in Infrared: Algorithms and Applied Systems* by Riad Ibrahim Hammoud, editor, Apr '10

*Handbook of Texture Analysis* by Majid Mirmehdi, Xianghua Xie, and Jasjit Suri, editors, Oct '09

*Markov Random Field Modeling in Image Analysis* By Stan Z. Li, Oct '09

*Pattern Recognition and Neural Networks* by B.D. Ripley Apr '09

*Close Range Photogrammetry: Principles, Methods, and Applications* by Luhmann, Robson, Kyle, and Harley, Oct '08

*Classification and Learning Using Genetic Algorithms: Applications in Bioinformatics and Web Intelligence* by Bandyopadhyay and Pal, Oct '08

*Learning Theory: An Approximation Theory Viewpoint* by Cucker and Zhou, Oct '08

*Character Recognition Systems—A Guide for Students and Practitioners* by Cheriet, Kharma, Liu, and Suen, Oct '08

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*Geometry of Locally Finite Spaces* by Kovalevsky, Oct '08

*Machine Learning in Document Analysis and Recognition* by Marinai and Fujisawa (Editors), Oct '08

*From Gestalt Theory to Image Analysis—A Probabilistic Approach* by Desolneux, Moisan, and Morel, Oct '08

*Numerical Recipes: The art of scientific computing, 3rd ed.* by Press, Teukolsky, Vetterling and Flannery, Jul '08

*Feature Extraction and Image Processing, 2nd ed.* by Nixon and Aguado, Jul '08

*Digital Watermarking and Steganography: Fundamentals and Techniques* by Shih, Jul '08

*Springer Handbook of Speech Processing* by Benesty, Sondhi, and Huang, eds., Jul '08

*Digital Image Processing: An Algorithmic Introduction Using Java* by Burger and Burge, Jul '08

*Bézier and Splines in Image Processing and Machine Vision* by Biswas and Lovell, Jul '08

*Practical Algorithms for Image Analysis, 2 ed.* by O’Gorman, Sammon and Seul, Apr '08

*The Dissimilarity Representation for Pattern Recognition: Foundations and Applications* by Pekalska and Duin, Apr '08

*Handbook of Biometrics* by Jain, Flynn, and Ross (Editors), Apr '08

*Advances in Biometrics – Sensors, Algorithms, and Systems* by Ratha and Govindaraju, (Editors), Apr '08

*Dynamic Vision for Perception and Control of Motion* by Dickmanns, Jan '08

*Bioinformatics* by Polanski and Kimmel, Jan '08

*Introduction to clustering large and high-dimensional data* by Kogan, Jan '08

*The Text Mining Handbook* by Feldman and Sanger, Jan '08

*Information Theory, Inference, and Learning Algorithms* by Makay, Jan '08

*Geometric Tomography* by Gardner, Oct '07

*“Foundations and Trends in Computer Graphics and Vision”* Curless, Van Gool, and Szeliski., Editors, Oct '07

*Applied Combinatorics on Words* by M. Lothaire, Jul '07

*Human Identification Based on Gait* by Nixon, Tan and Chellappar, Apr '07

*Mathematics of Digital Images* by Stuart Hogan, Apr '07

*Advances in Image and Video Segmentation* Zhang, Editor, Jan '07

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*Graph-Theoretic Techniques for Web Content Mining* by Schenker, Bunke, Last and Kandel, Jan '07

*Handbook of Mathematical Models in Computer Vision* by Paragios, Chen, and Faugeras (Editors), Oct '06

*The Geometry of Information Retrieval* by van Rijsbergen, Oct '06

*Biometric Inverse Problems* by Yanushkevich, Stoica, Shmerko and Popel, Oct '06

*Correlation Pattern Recognition* by Kumar, Mahalanobis, and Juday, Jul. '06

*Pattern Recognition 3rd Edition* by Theodoridis and Koutroumbas, Apr. '06

*Dictionary of Computer Vision and Image Processing* by R.B. Fisher, et. Al, Jan. '06

*Kernel Methods for Pattern Analysis* by Shawe-Taylor and Cristianini, Oct. '05

*Machine Vision Books* Jul. '05

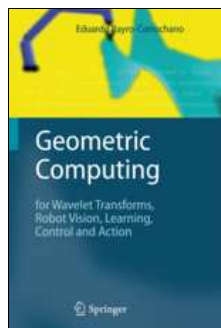
*CVonline: an overview*, Apr. '05

*The Guide to Biometrics* by Bolle, et al, Jan. '05

*Pattern Recognition Books*, Jul. '04

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# BOOKSBOOKSBOOKS



## *Geometric Computing* *for Wavelet Transforms, Robot Vision, Learning, Control, and Action*

by Eduardo Bayro Corrachano  
Springer, 2010

Reviewed by  
[Dietmar Hildenbrand](#) (Germany)

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This book presents the theory and engineering applications of geometric algebra, a very powerful mathematical system.

Part I of this book describes the power of geometric algebra in a very effective way. Its elegance is apparent especially in the description of the Maxwell Equation in only one very simple formula.

Part II describes a broad range of algebras, ranging from Euclidean algebra, motor algebra, Lie algebra, etc., to conformal geometric algebra. While most of these algebras are interesting from a more historical or more mathematical point of view, Part II ends up with the most important current algebra for engineering applications, the conformal geometric algebra. This very helpful mathematical system is explained very thoroughly with the whole background and important concepts like null space descriptions of the objects. Also, the conformal transformations are described in a very intuitive way.

Part III shows that the author is a profound expert in areas like Fourier transform and neural computing based on geometric algebra. Chapter 8, for instance, highlights the properties of different Fourier and wavelet transforms and their applicability for image analysis. Very helpful for the understanding of the use of geometric algebra in computer vision is chapter 9. It culminates in the elegant modeling of omnidirectional vision using conformal geometric algebra.

Parts IV, V and VI are dedicated to the application of geometric algebra in areas like robotics, image processing, computer vision, neurocomputing and medical computing. All these applications show the experience of the author in applying geometric algebra to real world applications. The results highlight that geometric algebra is a mathematical tool that can be used very advantageously in many engineering scenarios.

For an overall understanding of the benefits of geometric algebra chapter 2 is especially important. It is very helpful in order to understand the principles on how to apply geometric algebra to problems in perception and action systems. Another very important overview chapter is chapter 7, describing the principles of how to implement geometric algebra algorithms very efficiently.

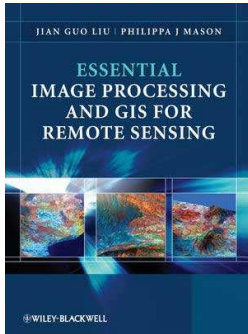
This book has a real potential to convince a big audience of the benefits of using geometric algebra in engineering applications, and I hope that it will be successful.

Remark: in the next edition of this book the term "CLUCal" should be corrected to "CLUCalc" as well as "Hildenbrand" with "n".

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# BOOKSBOOKSBOOKS

## *Essential Image Processing and GIS for Remote Sensing*



by  
**Jian Guo Liu and Philippa Mason**  
Wiley, 2009

Reviewed by  
[Tanish Zaveri](#) (India)

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Remote sensing images represent an objective record of the spectrum relating to the physical properties and chemical composition of Earth surface materials. Image processing is a vital tool for the extraction of thematic and quantitative information from raw image data. In this book, authors have presented a unique combination of tools, techniques, and applications. The book is divided into three parts, with the first part introducing essential image processing techniques for remote sensing. The second part looks at Geographical Information Systems (GIS) and begins with an overview of the concepts, structures and mechanisms by which GIS operate. Finally, the third part introduces Remote Sensing Applications. The authors have described the key concepts and ideas with clarity and in a logical manner and have also included numerous relevant conceptual illustrations. The book contains twenty three chapters, all of which are well written. Each chapter ends with key point remarks and important questions to test the reader's understanding.

### **Part I Image Processing**

#### **Chapter 1 Digital Image and Display**

This chapter gives an introduction to digital images and the fundamentals of a monochrome and a colour displays. A digital image is a two-dimensional array of numbers. Each cell of a digital image is called a pixel and the number representing the brightness of the pixel is called a digital number

(DN). This chapter also describes the technique to display a monochrome image as a colour image—pseudo colour display—where the sequence of gray levels is assigned to colours of increasing spectral wavelength and intensity.

#### **Chapter 2 Point Operations (Contrast Enhancement)**

This chapter discusses the contrast enhancement techniques for optimizing the image contrast and brightness for visualization or for highlighting information in particular DN ranges.

#### **Chapter 3 Algebraic Operations (Multi-image Point Operations)**

This chapter talks about the basic algebraic operations upon a multi-spectral image and their applications in image enhancement. Major applications are the selective enhancement of the spectral signatures of intended targets in a multi-

#### **Reviewer's conclusions:**

The book provides sufficient material for the students, researchers and professionals who would like to work in the area of image processing for remote sensing. This is an excellent reference book in the area of remote sensing and GIS.

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spectral image. Also, the formulae should be composed on the basis of spectral or physical principles, and designed for the enhancement of particular targets. This procedure, from spectral analysis to composing an algebraic formula, is generally referred to as supervised enhancement. The solar illumination on a land surface varies with terrain slope and aspect, which results in topographic shadows.

#### **Chapter 4 Filtering and Neighbourhood Processing**

This chapter illustrates image filtering techniques for enhancing lineaments (that may represent significant geological structures such as faults, veins, or dykes) and image texture. Digital filtering can be implemented based on convolution in the spatial domain or using the Fourier transform (FT) in the frequency domain. The various low-pass and high-pass filters are also described in this chapter. Gradient is the first derivative of DN change in a direction and gives a measurement of DN slope. Laplacian, as the second derivative, is a scalar that measures the change rate of DN slope. FFT-based, frequency-adaptive filters are also explained introduced for advanced readers.

#### **Chapter 5 RGB–IHS Transformation**

This chapter deals with the RGB-IHS and IHS-RGB transformation principles, which allow us to manipulate these qualities with great flexibility. Two decorrelation stretch techniques based on saturation stretch are also discussed. The direct decorrelation stretch technique performs a direct saturation stretch (DDS) without using RGB–IHS and IHS–RGB transformations, which is explained clearly with enough mathematical derivations. The hue of a colour is the spectral property coding. An HRGB colour composite technique is thus introduced that can code the spectral property of up to nine spectral bands into various colours to

generate an information-rich colour image without the effects of topographic shadows.

#### **Chapter 6 Image Fusion Techniques**

Recently, image fusion techniques have become the most widely used methods for integrating images or raster datasets of different spatial resolutions (or with different properties) to formulate new images. This chapter introduces the three simplest and most popular image fusion techniques: RGB–IHS transformation, Brovey transform (intensity modulation), and smoothing filter-based intensity modulation. Both the IHS and Brovey transform image fusion techniques can cause colour distortion. This issue can overcome by smoothing filter-based intensity modulation (SFIM), which also improves spatial resolution.

#### **Chapter 7 Principal Component Analysis**

This chapter discusses the principal component analysis (PCA) technique, which is a general method of analysis for correlated multi-variable datasets, and its applications. The principal components are the image data representation in the coordinate system formed by the axes of the ellipsoid data cluster, and hence PCA is a coordinate rotation operation to rotate the coordinate system of the original image bands to match the axes of the ellipsoid of the image data cluster. This is explained by looking at methods.

#### **Chapter 8 Image Classification**

This chapter describes the most commonly used image classification algorithms and post-classification processing techniques. These methods are essentially (1) multivariable statistical classifications that achieve data partition in the multi-dimensional feature space of multi-layer image data, such as a multi-spectral remotely sensed image, or (2) segmentation based on both

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statistics and spatial relationships with neighbouring pixels. The statistical classification has two major branches: unsupervised and supervised classifications. Both are explained in this chapter.

### **Chapter 9 Image Geometric Operations**

In remote sensing applications, geometric operations are mainly used for the co-registration of images of the same scene acquired by different sensor systems, at different times, or from different positions, and for rectifying an image to fit a particular coordinate system. In this chapter, the geometric transformation for remotely sensed data is introduced and two major steps of this transformation are illustrated. First, establish the polynomial deformation model, usually done using ground control points (GCPs). Then, resample the image based on the deformation model. This includes resampling image pixel positions (coordinates) and DN's.

### **Chapter 10 Introduction to Interferometric Synthetic Aperture Radar Techniques**

This chapter introduces several Interferometric synthetic aperture radar (InSAR) techniques for 3D terrain representation, for quantitative measurements of terrain deformation, and for the detection of random land surface changes. The differential InSAR (DInSAR) is used for the measurement of terrain deformation. InSAR coherence technique is used for random change detection, and the ratio coherence technique separates the spatial and temporal decorrelation.

## **Part II Geographical Information Systems**

### **Chapter 11 Geographical Information Systems**

This chapter gives an introduction to Geographical Information Systems (GIS) and their applications. Software tools for data processing to acquire different sorts of information are discussed. A

detailed differentiation between a cartographic map, a GIS, and thematic mapping is then explained. A map is an analogue spatial database which requires perception and interpretation to extract the embedded information, but once on paper, however, it is fixed and cannot be modified. A GIS display of a map does not require every piece of information to be visible at the same time. It can also change the depiction of a particular object according to the value of one of its attributes.

### **Chapter 12 Data Models and Structures**

The data describing a part of the Earth's surface or the features found on it is called geographic or spatial data. The objects located on the surface of the Earth are called geographic features, and their positions can be measured and described. This chapter discusses the structures and models for representation of the data. There are two basic types of structures used to represent the features or objects, namely raster and vector data. Rasters, images or grids consist of a regular array of digital numbers or DN's, representing picture elements or pixels. Vector, or discrete data, store the geometric form and location of a particular feature, along with its attribute information describing what the feature represents.

### **Chapter 13 Defining a Coordinate Space**

This chapter explains the issues of data acquired that are different or from an unknown coordinate system. Assigning the 'coordinates' of time and location such that these data can be understood is an important task in GIS functioning. To establish systems describing an object's location requires the consideration of the shape of the Earth. The coordinates are best described by the latitude and longitude system, while the shape of Earth is approximated by ellipsoid of rotation or spheroid. Map projection is an accepted means for fitting all

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or part of the curved surface of Earth to the flat surface or plane. This projection cannot be made without distortion of shape, area, distance, direction or scale.

### **Chapter 14 Operations**

This chapter deals with operations to be performed on spatial data. The chapter is focused on operations that assume raster inputs. Map algebra is used for manipulating raster variables defined over a common area. It also describes calculations within and between GIS data layers to produce a new layer. Map algebra operations can also be performed on vector data. A local operation involves the production of an output value as a function of the value(s) at the corresponding locations in the input layer(s).

### **Chapter 15 Extracting Information from Point Data: Geostatistics**

This chapter deals with two topics: gaining a better understanding of the data and dealing with incomplete data. Geostatistics is concerned with the description of patterns in spatial data; each known data point has a geographic location and a value, and the connection between them is exploited to help predict values at the unknown locations. The chapter gives an overview of the main issues and methods involved in extracting and exploiting statistical data.

### **Chapter 16 Representing and Exploiting Surfaces**

This chapter describes the surface models and the effect of the fractal nature of surface features. Gradient, aspect, and curvature are all phenomena which vary at different scales of topography, and so scales of observation. Measuring any of these phenomena in the field yields very different results according to the distance over which they are being measured.

### **Chapter 17 Decision Support and Uncertainty**

Uncertainty in the GIS data arises because the data we have are never complete, and our knowledge and understanding of a problem are flawed or limited, because of natural variation, measurement error, or out-of-date information. A spatial decision support system (SDSS) is a knowledge-based information system that helps decision makers to identify areas where there are unacceptable levels of risk associated with various predictive outcomes, so that they can then select appropriate courses of action. The methods for reducing uncertainty include defining and standardizing technical procedures, improving education and training (to improve awareness), collecting data more rigorously, increasing spatial/temporal data resolution during data collection, field checking of observations, better data processing methods and models, and developing an understanding of error propagation in the algorithms used.

### **Chapter 18 Complex Problems and Multi-Criteria Evaluation**

This chapter discusses the procedures by which we deal with complex geospatial problems to which there may be many contributing processes and pieces of evidence. There are a number of different approaches to multi-criteria decision making and analysis, with the aim of estimating suitability or favourability across a region. They are often divided into two broad categories: the knowledge-driven approach and data-driven approach, and of the latter there are two further kinds.

## **Part III Remote Sensing Applications**

### **Chapter 19 Image Processing and GIS Operation Strategy**

This chapter describes how the processing, interpretation, and analysis of multi-source image

*(Continued on page 15)*



*(Continued from page 14)*

and map data should be approached to produce thematic maps for a typical project. From defining the project goals, to extracting the real image information, this chapter presents a simple and generic formula and the steps for doing so.

## **Chapter 20 Thematic Teaching Case Studies in SE Spain**

This chapter discusses several teaching case studies on specific themes, using image data of SE Spain, to demonstrate remote sensing applications in earth and environmental sciences. The first case study demonstrates how to design simple and effective image processing techniques to map gypsum outcrops and extract gypsum quarries based on image spectral profile analysis. The second case study demonstrates the application of multispectral and multi-resolution remote sensing for mineral exploration via image processing. The third case study makes an estimation of the extent of vegetation and plasticulture in one small area. The final case study involves the use of multi-spectral imagery to improve the understanding of the regional geology, tectonics, and hydrology in the Tabernas–Andarax Basin of Almeria Province, Spain.

## **Chapter 21 Research Case Studies**

This chapter is based on the author's published research papers. The cases described [in this chapter] deal with topics such as the design and development of the most effective image processing techniques and strategies for extracting the required thematic information from images and the establishment of the most representative and powerful GIS model to serve the objectives of the project. In the first case study, multi-temporal image data were used to assess the change of vegetation coverage in the three parallel rivers region of Yunnan province, China. The second case study presents a regional

assessment of landslide hazard in the Three Gorges area of China, where a multi-variable elimination and characterization model, employing geometric mean and Boolean decision rules, has been applied to a multi-criterion image dataset to categorize the area into a series of potential landslide hazard levels, which are presented in map form. The third case study describes the Land surface change detection in a desert area in Algeria using multi-temporal ERS SAR coherence images. A multi-temporal SAR coherence image presents an objective record of irregular land surface changes between two SAR image acquisitions as decoherence features. The technique is most effective for detecting changes in a largely stable environment.

## **Chapter 22 Industrial Case Studies**

This chapter describes two industrial case studies. The first case describes the data and methodology used to enable a multi-disciplinary assessment of prospectivity for a number of economic commodities, namely nickel, copper, and PGEs (Platinum Group Elements). The work in the second case study, involves evaluation, through remote sensing, of the region around the city of Hargeisa, in Somalia, to identify potential bulk water resources for the city.

## **Chapter 23 Concluding Remarks**

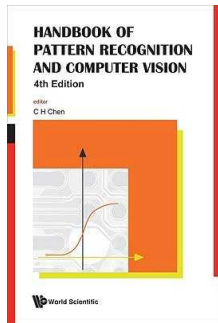
This chapter gives a summary on essential image processing and GIS techniques for remote sensing applications.

## **Appendices**

Overall, the book covers a variety of topics in the areas of image processing for remote sensing and GIS. Appendix A describes imaging sensor systems and remote sensing satellite details, and Appendix B describes online resources for information about technical details and data sources.

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# BOOKSBOOKSBOOKS



## *Handbook of Pattern Recognition and Computer Vision, 4th Edition*

by  
C.H. Chen  
World Scientific, 2009

Reviewed by  
[Arjan Kuijper](#) (Germany)

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Those regularly visiting ICPR know that the field of Pattern Recognition and Computer Vision is tremendously widespread – and rapidly moving.

For those who want to keep track of what is going on, *The Handbook of Pattern Recognition and Computer Vision* provides a neat overview. As the book I read is the 4th edition, I expected some (revised) overview of the field, starting in the early days of PR&CV. Wrong. The handbook discusses recent advances, where recent means the last five years, more or less. Each edition differs completely (or at least very significantly) from previous editions (published in 1993, 1999, and 2005). Each edition also has its focus area – topics that were “hot” at that time. For instance, the 90’s were the time of booming syntactic recognition, the 2005 edition had human identification as central issue, and this issue emphasizes on life sciences and 3D problems.

The series is dedicated to the late Prof. King-Sun Fu—well-known to the IAPR community. He was very active in PR&CV, exactly what these handbooks want to convey. Discussing all 33 chapters in depth would be impossible. Even the brief descriptions of each chapter in the book’s preface take three and a half pages: [www.worldscibooks.com/etextbook/7297/7297\\_preface.pdf](http://www.worldscibooks.com/etextbook/7297/7297_preface.pdf).

Just as in the previous editions, the book consists of five parts. Standard are the chapters “*Basic Methods in Pattern Recognition*” and “*Basic Methods in Computer Vision and Image Processing*”, although the wording “image processing” is new, signaling a move towards imaging. Then “*Recognition Applications*” is the traditional chapter discussing the wide variety of (potential) PR applications, ranging from recognizing handwritings via emotions and remote sensing to solar image features. Contributions in Chapter 4 discuss the “hot topics”: “*Computer Vision and Pattern Recognition in Life Sciences and Human ID*”. Finally, the Chapter “*System and Technology*” covers several frameworks for e.g. face synthesis, video surveillance, and intelligent watermarking. To figure out the precise contents, just visit [www.worldscibooks.com/etextbook/7297/7297\\_toc.pdf](http://www.worldscibooks.com/etextbook/7297/7297_toc.pdf)

I personally find this book very useful as a handbook on my desk to get a first and quick impression of a certain topic “I always wanted to know but never dared to ask”.

Furthermore, it is a clear candidate for any PR/CV library, just like its successors.

*(Continued on page 17)*

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Finally, it is very useful in a “selected recent topics in PR & CV” seminar, as most chapters in the chapters 3-5 are very suited for these topics. Chapters 1 and 2 can very well serve as core material for a PR & CV advanced course or seminar.

Do I have any complaints? Well, actually hardly any. The only one that came up during reading was that the style template differs between chapters. I identified two styles that were very likely caused by using either LaTeX or Word as text processors. It would be nice if that could be harmonized in the next edition that theoretically should appear in 2015. Interesting guess is what the “hot topics” will be in 4 years. My bet is the inclusion of *Computer Graphics*—as 3D is getting more and more important—and *parallel/GPU programming*—since 3D computations simply require a tremendous amount of computing power.

We’ll see!

## 15th Iberoamerican Congress on Pattern Recognition

November 8-11, 2010  
Sao Paulo, Brazil

General Co-Chairs:

Isabelle Bloch (France)  
[Roberto M. Cesar-Jr.](#) (Brazil)

Report prepared by the General Co-Chairs

As it was the case for previous conferences, CIARP2010 attracted participants from around the world with the aim of promoting and disseminating ongoing research on mathematical methods and computing techniques for pattern recognition, computer vision, image analysis, and speech recognition, as well as their applications in diverse areas such as robotics, industry, health, entertainment, space exploration, telecommunications, data mining, document analysis, and natural language processing and recognition, to name only few of them. Moreover, it provided a forum for scientific research, experience exchange, share of new knowledge and an increase in cooperation between research groups in pattern recognition and related areas.

It is important to underline the fact that these conferences have contributed significantly to the growth of national associations for pattern recognition in the Iberoamerican region, all of them as members of the International Association for Pattern Recognition (IAPR).

The scientific program included a tutorial day, with two topics addressed: Introduction to kernel machines, by Stéphane Canu, and Soft computing, f-granulation and pattern recognition, by Sankar Pal.

The next three days were organized in a single-

**Proceedings of the  
conference have been  
published by Springer  
in the series  
Lecture Notes in  
Computer Science  
(Volume 6419)**



track conference, with invited talks, oral presentations, and posters. We had two distinguished invited speakers: Alexandre Falcão (Design of pattern classifiers using optimum-path forest with applications in image analysis) and Stéphane Canu (Recent advances in kernel machines). The oral and poster sessions included

*(Continued on page 19)*

*(Continued from page 18)*

70 papers selected from 145 submissions. All submissions were double-blind reviewed by at least two reviewers.

In addition, an IAPR-CIARP award, consisting of a cash prize, a trophy and a certificate, was given to the authors of the best paper registered and presented at CIARP2010. The aim of this award was to acknowledge and encourage excellence and originality of new models, methods and techniques with an outstanding theoretical contribution and practical application to the field of pattern recognition and/or data mining. The selection of the winner was based on the wish of the author to be considered to the prize, the evaluation and recommendations from members of the Program Committee and the evaluation of the IAPR-CIARP Award Committee. This committee, carefully chosen to avoid conflicts of interest, evaluated each nominated paper in a second review process, which included the quality of the oral and/or poster presentation.

The conference, organized by the University of Sao Paulo, had approximately 100 participants.

We would like to thank all participants of the organizing committee and auxiliary committee, at USP and UFABC, for their huge work, which could make the conference a success. The conference website ([www.ciarp.org/xv/](http://www.ciarp.org/xv/)) and pictures ([picasaweb.google.com/dedea2/CIARP2010?authkey=Gv1sRgCNewo7Wp59Lz4qE](http://picasaweb.google.com/dedea2/CIARP2010?authkey=Gv1sRgCNewo7Wp59Lz4qE)) are available.

A special issue with the selected best papers will be published by the [International Journal of Pattern Recognition and Artificial Intelligence - IJPRAI](#)



# Conference Report: [DGCI2011](#)

## 16th International Conference on Discrete Geometry for Computer Imagery

6-8 April 2011  
Nancy, France

General Chair: [Isabelle Debled-Rennesson](#) (France)

Co-chair: [Bertrand Kerautret](#) (France)

Report prepared by the General Chair and the Co-chair



DGCI is the main conference of the IAPR Technical Committee on Discrete Geometry ([TC18](#)) and is held approximately every 18 months. The 16th edition of the International Conference on Discrete Geometry for Computer Imagery was held in Nancy, France, and was organized by the ADAGIo team of the [LORIA laboratory](#) (Lorraine research center in computer science and its applications).

DGCI2011 attracted many researchers (92 participants) from all around the world. Indeed, 70 papers were submitted, from 22 different countries, confirming the international status of the conference. Following a thorough reviewing process, remodeled from DGCI 2008, 40 papers were accepted and published in the Springer Lecture Notes in Computer Science Series (volume number 6607). Altogether, 20 papers were scheduled for oral presentation in single-track

sessions, and 20 papers were presented as posters, with preliminary plenary sessions with very short oral presentations of these posters.

The contributions focused on models for discrete geometry, discrete and combinatorial topology, geometric transforms, discrete shape representation and analysis, discrete tomography, and discrete and combinatorial tools for image segmentation and analysis.

In addition, the program was enriched by three invited lectures, presented by internationally known speakers:

- [Agnes Desolneux](#) (CNRS researcher, MAP5, Paris Descartes University, France), gave a talk on “A probabilistic grouping principle to go from

*(Continued on page 21)*



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*pixels to visual structures*". She presented the translation of the principle of visual perception (Helmholtz principle) into a computational tool for image analysis.

- [Jarek Rossignac](#) (Professor, GVU Center, Georgia Tech, USA), was the IAPR invited speaker of the DGCI2011 conference. He proposed an overview of his work centered on *ball-based* approaches for analyzing, transforming, comparing, and morphing shapes. More information can be found here: [www.gvu.gatech.edu/~jarek/papers.html](http://www.gvu.gatech.edu/~jarek/papers.html)
- [Jean Serra](#) (Professor Emeritus, ESIEE-LIGM, Paris, France) gave a talk about "*Hierarchical Segmentations*". He described segmentation approaches based on the hierarchies of partitions of an image and on the minimization of energies satisfying the condition of hierarchical increasingness.

For the first time, DGCI hosted a demonstration session. The purpose of this successful session was to provide the opportunity to present and share effective applications related to the main topics of DGCI. Fourteen demonstrations were presented including a new Discrete Geometry Library, named DGtal ([iris.cnrs.fr/dgtal/](http://iris.cnrs.fr/dgtal/)).

For the second time, the DGCI steering committee attributed an award for the Best Student Paper. The winner is Wagner Fortes for the paper: "Bounds on the difference between reconstructions in binary tomography", Kees Joost Batenburg, Wagner Fortes, Lajos Hajdu, Robert Tijdeman

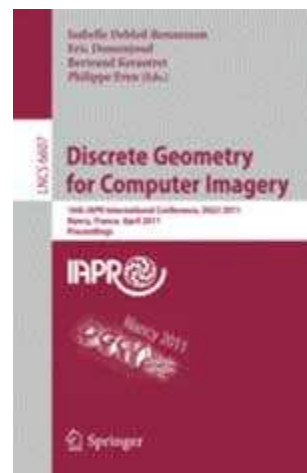
Following the conference, two [special issues](#) in the journals "Discrete Applied Mathematics" and "Computer Vision and Image Understanding" will

be specially edited. Another special issue is proposed in the on line journal "Image Processing On Line".

The social program proposed a guided tour "Nancy, from the Middle Age to Renaissance" on the first evening, including an evening buffet. The gala dinner was held in the Town Hall located on the famous [Stanislas Square](#) (on UNESCO's World Heritage List).

The next DGCI conference will be held in Seville, Spain, March 20-22, 2013, organized by the Andalusian research group *Combinatorial Image Analysis* ("CIA" research group) of the Applied Math Department of the Seville University, with Rocio Gonzalez-Diaz and Maria Jose Jimenez as Co-Chairs.

**Proceedings of the  
conference have been  
published by Springer  
in the series  
Lecture Notes in  
Computer Science  
(Volume 6607)**



# Workshop Report: CCIW2011

## Computational Color Imaging Third International Workshop

20-21 April 2011  
Milano, Italy

Organizers/Chairs:

[Raimondo Schettini](#) (Italy)

[Shoji Tominaga](#) (Japan)

[Alain Tremeau](#) (France)

Report prepared by the Workshop Co-Chairs

The third edition of CCIW was organized by the University of Milano-Bicocca with the endorsement of the International Association for Pattern Recognition (IAPR), the Group of Italian Researchers on Pattern Recognition (GIRPR) affiliated with IAPR, and the Italian *Gruppo del Colore* (GdC). The second CCIW was organized by the University JeanMonnet and the Laboratoire Hubert Curien UMR 5516 (Saint-Etienne, France) with the endorsement of the International Association for Pattern Recognition (IAPR), the French Association for Pattern Recognition and Interpretation (AFRIF) affiliated with IAPR, and the *Groupe Franais de l'Imagerie Numrique Couleur* (GFINC). See the report in the [July 2009 issue of the IAPR Newsletter](#).

Our goal was to bring together engineers and scientists from various imaging companies and from technical communities all over the world to discuss diverse aspects of their latest work, ranging from theoretical developments to practical applications in the field of color imaging, color image processing, and analysis. The workshop was therefore intended for researchers and practitioners in the fields of digital imaging, human vision and perception, multimedia, visual communications, computer vision, and the consumer electronics industry, who

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Computer Science  
(Volume 6626)**



interested in the fundamentals of color imaging and its emerging applications. We received many excellent submissions. Each paper was peer reviewed and then the General Chairs carefully selected only 16 papers in order to achieve a high

(Continued on page 23)

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scientific level at the workshop. The final decisions were based on the criticisms and recommendations of the reviewers and the relevance of papers to the goal of the workshop.

In order to have an overview of current research directions in computational color imaging, four different sessions were organized: Computational photography, Color and perception, Color imaging, and Computational imaging

In addition to the contributed papers, six distinguished researchers were invited to this third CCIW to deliver keynote speeches on current research directions in computational color imaging:

- Gaurav Sharma, on “Imaging Arithmetic: Physics U Math > Physics + Math”
- Maria Vanrell, on “Perception-Based Representations for Computational Color”
- Erik Reinhard, on “Color Spaces for Color Transfer”
- Keigo Hirakawa, on “Spectral Filter Array Design for Multispectral Image Recovery”
- Thorsten Hansen on “The contribution of color to detecting edges in natural scenes”
- Göte Nyman on “How is a good image different from a bad one - new strategies for subjective image quality measurement”

The last session of CCIW2011 consisted in a panel discussion, where after a summary of the issues discussed during the workshop, the chairs, the invited speakers, and all the attendees addressed the hot topics regarding the present situation and the future of color imaging.

There are many organizations and people to thank for their various contributions to the planning of this meeting. We are pleased to acknowledge the generous support of the Chiba University, the University of Saint Etienne, the Dipartimento di Informatica Sistemistica e Comunicazione, Universita' degli Studi di Milano-Bicocca, the Italian Gruppo del Colore, and our industrial sponsors: Konica-Minolta, Eidomax, and OIKOS. Special thanks also go to Francesca Gasparini, Gianluigi Ciocca and to all our colleagues on the Conference Committee for their dedication and work, without which this workshop would not have been possible. Finally, we envision the continuation of this unique event, and we are already making plans for organizing the next 2013 CCIW workshop in Japan.

# Workshop Report: [GbR2011](#)

## 8th IAPR TC-15 Workshop on Graph-based Representations in Pattern Recognition

May 18-20, 2011  
Münster, Germany

Co-Chairs:

[Xiaoyi Jiang](#) (Germany)

[Miguel Ferrer](#) (Spain)

[Andrea Torsello](#) (Italy)

Report prepared by the Co-Chairs

GbR is a biennial workshop, organized by IAPR Technical Committee 15 (TC-15) on Graph-based Representations, that aims to encourage research works in Pattern Recognition and Image Analysis within the graph theory framework.




The second invited talk was delivered by Milan Sonka (University of Iowa, USA) on the topic of graph-based algorithms for image segmentation in the biomedical image analysis field.

The workshop was run over three days, with very

GbR2011 was a very successful and smoothly run workshop. The workshop received 41 submissions from 15 countries and 4 continents from which the Program committee selected 11 for oral presentation and 16 as posters. The papers presented in the workshop covered the use of graphs at all levels of representation, providing novel contributions on a wide range of topics related to graphs ranging from novel theoretic and algorithmic developments to state of the art graph-based applications.

well populated oral sessions right through to the end of the conference. The poster sessions were bustling and were an excellent forum for discussion and feedback.

The workshop included two [IAPR keynote addresses](#). The first keynote speech was presented by Olivier Lezoray (University of Caen, France) who discussed a broad view on the use of partial difference equations on graphs for image- and data-processing.



**Proceedings of the conference have been published by Springer in the series Lecture Notes in Computer Science (Volume 6658)**



Please check the ICPR 2012 web site [www.icpr2012.org](http://www.icpr2012.org) frequently.

# ICPR

The 21st International  
Conference on Pattern Recognition

# 2012

N o v e m b e r

# 11-15, 2012

Tsukuba International Congress Center  
Tsukuba Science City, JAPAN

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

The aim of this conference is to  
bring together international ex-  
perts to share their experiences  
and to promote research and de-  
velopment in  
Pattern Recognition.

ICPR2012  
Paper Submission Deadline:  
March 31, 2012

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## Track chairs

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Richard Bowden (UK)  
Sing Bing Kang (USA)  
Long Quan (China)

### Virtual Reality & Medical Applications

Tobias Höllerer (USA)  
Gudrun Klinker (Germany)  
Naokazu Yokoya (Japan)

### Pattern Recognition & Applications

Noboru Babaguchi (Japan)  
Rita Cucchiara (Italy)  
Qiang Ji (USA)

### Signal, Speech, and Video Processing

Tsuhan Chen (USA)  
Touradj Ebrahimi (Switzerland)  
Kyoung Mu Lee (Korea)

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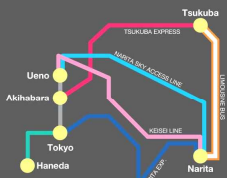
### Local Arrangement Co-Chairs

### Important Dates

Deadline for paper submission  
Notification of paper acceptance  
Camera ready papers and author registration  
Deadline for workshop proposal  
Deadline for tutorial proposal  
Deadline for contests proposal

March 31, 2012  
June 15, 2012  
July 15, 2012  
January 6, 2012  
April 30, 2012  
July 15, 2011

Yoichi Sato (Japan), Rahul Sukthankar (USA)  
Andreas Dengel (Germany), Eisaku Maeda (Japan)  
Robert Fisher (UK), Yasuyo Kita (Japan)  
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Ken-ichi Maeda (Japan)  
Kenji Suzuki (Japan)  
Itaru Kitahara (Japan), Takeshi Kurata (Japan)



# Call for Nominations

## King-Sun Fu Prize

**Nominations deadline: 6 April 2012**

**Nomination and endorsement forms can be downloaded from the [KS Fu Prize](#) page of the IAPR web site.**

The International Association for Pattern Recognition (IAPR) is pleased to announce a call for nominations for the King-Sun Fu Prize in honor of the memory of Professor King-Sun Fu.

Professor Fu was instrumental in the founding of IAPR, served as its first president, and is widely recognized for his extensive contributions to the field of pattern recognition.

This biennial prize is given to a living person in recognition of an outstanding technical contribution to the field of pattern recognition, and consists of a cash amount and a suitably inscribed certificate. The prize is derived from interest income from a special fund set up for this purpose.

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.

The 2012 prize will be presented at the

21st International Conference on Pattern Recognition (ICPR)  
Tsukuba Science City, Japan  
November 11 - 15, 2012

The nomination must be made on special nomination and endorsement forms, and must be received by the Prize Committee Chairman no later than April 6, 2012. Completed and signed nomination and endorsement forms must be submitted in electronic form. The nominator as well as endorsers should send their completed forms by email to the chairman of the Prize Committee:

Prof. Horst Bunke  
Chair, K-S. Fu Prize Committee  
University of Bern, Switzerland  
email: [bunke@iam.unibe.ch](mailto:bunke@iam.unibe.ch)

### **Past winners of the K-S Fu Prize:**

**Professor Horst Bunke**  
2010 Istanbul

**Professor Anil K. Jain**  
2008 Tampa

**Professor Josef Kittler**  
2006 Hong Kong

**Professor J. K. Aggarwal**  
2004 Cambridge

**Professor Thomas S. Huang**  
2002 Quebec City

**Professor Theo Pavlidis**  
2000 Barcelona

**Professor Jean-Claude Simon**  
1998 Brisbane

**Professor Teuvo Kohonen**  
1996 Vienna

**Professor Herbert Freeman**  
1994 Jerusalem

**Professor Levin Kanal**  
1992 The Hague

**Professor R.L. Kashyap**  
1990 Atlantic City

**Professor Azriel Rosenfeld**  
1988 Rome



# ICPR 2012

## Additional Calls for Nominations: J.K. Aggarwal Prize and IAPR Fellow Awards

\*\*\*Nomination and Endorsement Forms are available at "Fellows and Awards" page of the IAPR web site\*\*\*

### Call for Nominations for the J. K. Aggarwal Prize

Deadline for Submission of Nomination and  
Endorsement Forms is April 11, 2012

The International Association for Pattern Recognition (IAPR) is pleased to announce a call for nominations for the third J.K. Aggarwal Prize in honor of Professor J.K. Aggarwal. Professor Aggarwal is widely recognized for his extensive contributions to the field of pattern recognition and for his participation in 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.

The 2012 prize will be presented at the  
21st International Conference on Pattern Recognition  
(ICPR)  
Tsukuba, Japan  
November 11-15, 2012

The prize recipient is expected to present an invited talk at the conference.

The nomination must be made on special nomination and the endorsement forms and must be submitted in electronic form. The nominator as well as endorsers should email their completed forms directly to the Appointed Chairman of the J.K. Aggarwal Prize Committee via the specified email address:

Song-Chun Zhu Chair, J.K. Aggarwal Prize Committee  
8125 Math Science Bldg. Box 951554  
University of California, Los Angeles  
Los Angeles, CA 90095  
USA  
email: [sczhu@stat.ucla.edu](mailto:sczhu@stat.ucla.edu)

### Call for Nominations: IAPR Fellow Award

Deadline for Submission of Nomination and  
Endorsement Forms is January 28, 2012

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

To initiate a nomination, a nominator must submit an [IAPR Fellow Nomination Form](#). Any member of an IAPR Member Society can serve as nominator, except for the nominee him/herself and the current members of the Fellow Committee.

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

Electronic [Nomination](#) and [Endorsement](#) forms should be submitted no later than January 28, 2012

Each electronic submission will be acknowledged by an email containing the submitted form. In case of difficulty please address your data and the problem encountered through email to the chair of the Fellow Committee, Mark Nixon,

To: [msn@ecs.soton.ac.uk](mailto:msn@ecs.soton.ac.uk)  
Subject: IAPR fellowship 2012  
CC: [iaprwebmaster@cedar.buffalo.edu](mailto:iaprwebmaster@cedar.buffalo.edu)

For detailed information about the nomination and the endorsement please download these [instructions](#). [Electronic versions](#) of the nomination forms are also available.

IAPR appreciates your efforts to support our fellowship program!

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# Of interest...

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## Free Books!

The *IAPR Newsletter* is looking for reviewers for the books listed below.

If you have interest and some knowledge in the topic, email us with your mailing address. We will send you a copy of the book—which you may keep—and will expect in return a review for the *Newsletter*.

[Arjan Kuijper](#), IAPR Newsletter Associate Editor for Book Reviews

The following titles are available to be reviewed:

In the series: [Advances in Computer Vision and Pattern Recognition](#):

**Handbook of Remote Biometrics for Surveillance and Security**

Tistarelli, Massimo; Li, Stan Z.; Chellappa, Rama (Eds.)

2009, XIV, 382 p. 166 illus., 91 in color., Hardcover

<http://www.springer.com/computer/computer+imaging/book/978-1-84882-384-6>

***Support Vector Machines for Pattern Classification, 2nd Ed.***

Shgeo Abe

Springer, 2010

[www.springer.com/computer/image+processing/book/978-1-84996-097-7](http://www.springer.com/computer/image+processing/book/978-1-84996-097-7)

Plus, from Taylor and Francis Books, Inc./CRC Press:

***Digital Imaging for Cultural Heritage Preservation: Analysis, Restoration, and Reconstruction of Ancient Artworks (Cat. #K11154)***

By Filippo Stanco, Sebastiano Battiato, and Giovanni Gallo

July, 2011

[www.crcpress.com/product/isbn/9781439821732](http://www.crcpress.com/product/isbn/9781439821732)

# Conference Planner

*NOTE: This is not an exhaustive list of conferences. It is a list of conferences sponsored or endorsed by IAPR plus additional conferences that have been brought to the attention of the editor (these non-IAPR events are denoted with an \*). The [IAPR web site](#) has more up-to-date information about [IAPR conferences](#) and a link to USC's Institute for Robotics and Intelligent Systems list of [Computer Vision Conferences](#) (A. Branzan Albu, ed.)*

Highlighting indicates that paper submission deadline has not yet passed.  
An asterisk \* denotes a non-IAPR event.

## 2011

<a href="#">CAIP 2011</a>	CAIP '09 report in Jan'10 issue	14th International Conference of Computer Analysis of Images and Patterns	Seville, Spain	29-31 Aug 11
<a href="#">IMVIP 2011 *</a>		Irish Machine Vision and Image Processing Conference 2011	Dublin, Ireland	7-9 Sep 11
<a href="#">ICIAP 2011</a>	ICIAP2009 report in Oct 09 issue	16th International Conference on Image Analysis and Processing	Ravenna, Italy	14-16 Sep 11
<a href="#">GREC 2011</a>	GREC 2009 report in Oct'09 issue	9th IAPR International Workshop on Graphics Recognition	Soeul, Korea	15-16 Sep 11
<a href="#">PSL 2011</a>		1st Workshop on Partially Supervised Learning	Ulm, Germany	15-16 Sep 11
<a href="#">ICDAR 2011</a>	ICDAR2009 report in Oct'09 issue	11th International Conference on Document Analysis and Recognition	Beijing, China	18-21 Sep 11
<a href="#">ISVC11 *</a>		7th International Symposium on Visual Computing	Las Vegas, Nevada, USA	26-28 Sep 11
<a href="#">SIMBAD 2011</a>		1st International Workshop on Similarity-Based Pattern Analysis and Recognition	Venice, Italy	28-30 Sep 11
<a href="#">IJCB 2011</a>	ICB 2009 report in Jul'09 issue	IEEE/IAPR International Joint Conference on Biometrics Joint edition of: International Conference on Biometrics and Biometrics Theory, Application, and Systems conference	Washington, DC, USA	11-13 Oct 11
<a href="#">CIARP 2011</a>	CAIRP2010 report in Jlu'10 issue	16th Iberoamerican Congress on Pattern Recognition	Pucón, Chile	15-18 Nov 11
<a href="#">ACPR 2011</a>		First Asian Conference on Pattern Recognition	Beijing, China	28-30 Nov 11
<a href="#">DICTA 2011</a>	DICTA2010 report in Apr'11 issue	International Conference on Digital Image Computing: Techniques and Applications	Noosa, Queensland, Australia	6-8 Dec 11

*Conference Planner continued on next page...*

# Conference Planner (continued)

Highlighting indicates that paper submission deadline has not yet passed.  
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## 2012

<a href="#"><u>CTIC 2012</u></a> *		4th International Workshop on Computational Topology in Image Context	Bertinoro, Italy	6-8 Feb 12
<a href="#"><u>DAS 2012</u></a>	DAS2010 report in Jan'11 issue	10th IAPR International Workshop on Document Analysis Systems	Gold Coast, Queensland, Australia	27-29 Mar 12
<a href="#"><u>ICB2012</u></a>	ICP2009 report in Oct'09 issue	5th International Conference on Biometrics	New Delhi, India	30 Mar-1 Apr 12
<a href="#"><u>ICFHR 2012</u></a>	ICFHR2010 report in Apr'11 issue	13th International Conference on Frontiers in Handwriting Recognition	Bari, Italy	Sep 12
<a href="#"><u>ICPR 2012</u></a>	ICPR2010 Special Issue: Oct'10	21st International Conference on Pattern Recognition	Tsukuba Science City, Japan	11-15 Nov 12