
RECPAD-2002

12TH PORTUGUESE CONFERENCE ON PATTERN RECOGNITION

CONFERENCE PROGRAM

JUNE 27-28, 2002
UNIVERSIDADE DE AVEIRO

RECPAD-2002

12TH PORTUGUESE CONFERENCE ON PATTERN RECOGNITION

AVEIRO, PORTUGAL

Thursday, June 27th

9:00–12:00	Registration	
9:15–9:30	Opening Session	
9:30–10:30	Invited Lecture: Prof. Maria Petrou	
10:30–11:00	Break	
11:00–12:00	Invited Lecture: Prof. José Principe	
12:00–14:00	Lunch	
14:00–15:00	Computer Vision (oral)	
15:10–16:30	Signal Processing (oral)	Biomedical Applications (poster)
16:30–16:50	Break	
16:50–18:10	Video Analysis (oral)	Signal Processing (poster)
18:10–19:00	Meeting of the APRP SIG's	
20:00	Conference Dinner	

Friday, June 28th

9:00–10:40	Applications (oral)	Pattern Recognition (poster)
10:40–11:00	Break	
11:00–12:00	Invited Lecture: Prof. Paulo Ferreira	
12:00–14:00	Lunch	
14:00–15:40	Pattern Recognition (oral)	Image and Video (poster)
15:40–16:00	Break	
16:00–17:30	Image Analysis (oral)	Computer Vision (poster)

Invited Lectures

Thu 27th, 9:30–10:30

3D texture analysis for medical applications

Maria Petrou

School of Electronics, Computing and Mathematics, University of Surrey, Guildford, U. K.

Thu 27th, 11:00–12:00

Information Theoretic Learning: A Nonparametric Approach

José C. Principe

Computational NeuroEngineering Laboratory, University of Florida, Gainesville, FL, U.S.A.

Fri 28th, 11:00–12:00

Handling impulsive noise

Paulo J. S. G. Ferreira

Dep. de Electronica e Telecomunicações, Universidade de Aveiro, Portugal

Oral Sessions

Thu 27th, 14:00–15:00 Computer Vision

14:00 — A DCT-Based Feature Transformation Strategy for Fast Object Recognition

Qinghua Wang, Luis Seabra Lopes

Departamento de Electrónica e Telecomunicações/IEETA, Universidade de Aveiro, Portugal

14:20 — Model-Based Pose Estimation in Parabolic Catadioptric Images

António Paulino, Helder Araújo

Institute of Systems and Robotics, Dept. of Electrical and Computer Eng. — Polo II, University of Coimbra, Portugal

14:40 — Robust Normalization of 3D Facial Meshes using Automatically Located Feature Points

Belén Moreno, Ángel Sánchez, José F. Vélez

Dept. CC. Experimentales e Ingeniería of Universidad Rey Juan Carlos, Madrid, Spain

Thu 27th, 15:10–16:30 Signal Processing

15:10 — Modeling Intra and Inter Speaker Variability

Carla Lopes¹, Fernando Perdigão²

¹Instituto de Telecomunicações, Pólo de Coimbra / Escola Superior de Tecnologia e Gestão de Leiria, Portugal

²Instituto de Telecomunicações, Pólo de Coimbra / Dept. Eng. Electrotécnica e Computadores, Pólo II da Universidade de Coimbra, Portugal

15:30 — Average Error Bound for the Mixture of Experts MNN Architecture

Luís A. Alexandre^{1,2}, Aurélio C. Campilho^{2,3}, Mohamed Kamel⁴

¹Dept. Informática, Univ. Beira Interior, Covilhã, Portugal

²INEB - Instituto de Engenharia Biomédica, Porto, Portugal

³Fac. Engenharia, Univ. Porto, Portugal

⁴Dept. Systems Design Engineering, Univ. Waterloo, Canada

15:50 — Nonlinear Source Separation using a Genetic Algorithm

C.G.Puntonet¹, F. Rojas¹, I.Rojas¹, T.Westernhuber², E.W.Lang²

¹Dept. of Computer Architecture and Technology, University of Granada, Spain

²Inst. of Biophysics, University of Regensburg

16:10 — A Method for Constructing Nonlinear Discrete Wavelet Transforms

Lute Kamstra

Centre for Mathematics and Computer Science, Amsterdam, The Netherlands

Thu 27th, 16:50–18:10 Video Analysis

16:50 — The Role of Middle Level Features for Robust Shape Tracking

Jacinto C. Nascimento¹, Arnaldo J. Abrantes², Jorge S. Marques¹

¹ISR/IST, Lisbon, Portugal

²ISEL, Lisbon, Portugal

17:10 — Radon-like Transforms of Log-polar Images for Affine Motion Estimation

V. Javier Traver, Filiberto Pla

Dept. Llenguatges i Sistemes Informàtics, Universitat Jaume I, Castellón, Spain

17:30 — Quasi-simultaneous Motion Segmentation and Estimation Using a Generalized Least Square Method

R. Montoliu, F. Pla

Computer Vision Group, Universitat Jaume I, Castellón, Spain

17:50 — Experimental Comparison of Existing Video Shot Detection Techniques in Compressed Video

Xiaoqiang Huang, Mark Fisher, Dan Smith

University of East Anglia, Norwich, U.K.

Fri 28th, 9:00–10:40 Applications

9:00 — Functional Trees: a Case Study on Cardiotocographic Data

João Gama¹, Marques de Sá²

¹LIACC, FEP University of Porto, Portugal

²DEEC, FEUP University of Porto, Portugal

9:20 — Automatic Analysis of Fetal Echographic Images

Sandra Vilas Boas Jardim¹, Mário A. T. Figueiredo²

¹Escola Superior de Tecnologia, Instituto Politécnico de Castelo Branco, Portugal

²Instituto de Telecomunicações, Instituto Superior Técnico, Lisboa, Portugal

9:40 — Some Results Regarding Applying ICA in Breast Cancer Microscopic Imagery

Ovidiu Grigore, Andre Puga

INESC Porto, Portugal

10:00 — Estimating Intramuscular Fat Content of Cured Iberian Loin Using Statistical Analysis of its Magnetic Resonance Images

E. Cernadas¹, M. L. Durán², P. G. Rodríguez², A. Caro², E. Muriel³, R. Palacios⁴

¹Dpto. de Informática, E.S.E Informática, Univ. de Vigo, Spain

²Dpto. de Informática, Escuela Politécnica, Universidad de Extremadura, Spain

³Dpto. de Tecnología de los Alimentos, Fac. de Veterinaria, Universidad de Extremadura, Spain

⁴Servicio de Radiología, Hospital Universitario Infanta Cristina, Badajoz, Spain

10:20 — Horse Recognition: A General Approach to Object Recognition

Merel Noorman¹, Kai Otto², Marten den Uyl², Rein van den Boomgaard³

¹Vicar Vision, Amsterdam, The Netherlands

²Sentient Machine Research B.V., Amsterdam, The Netherlands

³University of Amsterdam, Amsterdam, The Netherlands

Fri 28th, 14:00–15:40 Pattern Recognition

14:00 — Pattern Detection Using Cortical Cell Models

L. M. Santos, J. M. H. du Buf

Vision Laboratory, University of Algarve, Faro, Portugal

14:20 — Context-Dependent Clustering based on Dissimilarity Increments

Ana L. N. Fred

Instituto de Telecomunicações / Instituto Superior Técnico, Lisbon, Portugal

14:40 — Morphological Modelling in Features Space

Teresa Barata, Pedro Pina

CVRM / Centro de Geo-Sistemas, Instituto Superior Técnico, Lisbon, Portugal

15:00 — Comparison of Fuzzy Clustering and Quadtree Methods Applied to Color Segmentation

J. R. Caldas Pinto, João M. C. Sousa

Technical University of Lisbon, Instituto Superior Técnico, Dept. Mech. Eng./GCAR IDMEC, Portugal

15:20 — Diatom Contour Classification by Curvature of Convex and Concave Segments

R. E. Loke, J. M. H. du Buf

Vision Laboratory, University of Algarve, Faro, Portugal

Fri 28th, 16:00–17:20 Image Analysis

16:00 — Toward the Characterization of Directional Texture Classes

Sébastien Mavromatis, Jean-Marc Boï, Rémy Bulot, Jean Sequeira

ESIL - Equipe LXAO, Marseille, France

16:20 — Scale-space Shape Comparison Suitable for Shape Based Retrieval

António M. G. Pinheiro¹, Mohammed Ghanbari²

¹Universidade da Beira Interior, Covilhã, Portugal

²Department of Electronic Systems Engineering, University of Essex, Colchester, U.K.

16:40 — Optimal Intervals for Fuzzy Categories of Colour Temperature With Application to Image Browsing

Wladyslaw Skarbek^{1,2}, Grzegorz Kukielka^{2,3}

¹Institute of Radioelectronics, Warsaw University of Technology, Warsaw, Poland

²Altkom Akademia S.A., Warsaw, Poland

³Institute of Microelectronics and Optoelectronics, Warsaw University of Technology, Warsaw, Poland

17:00 — MINN: A Multiple-Instance Learning Neural Network for Image Classification Problems

Y. Y. Xu¹, Hsin-Chia Fu¹, H. T. Pao²

¹Department of Computer Science and Information Engineering, National Chiao-Tung University, Hsinchu, Taiwan, ROC

²Department of Management Science, National Chiao-Tung University, Hsinchu, Taiwan, ROC

Poster Sessions

Thu 27th, 15:10–16:30 Biomedical Applications

P.01 — Comparison of Two Neural Networks Models to Estimate Foetal Weight

F. Sereno, J.P. Marques de Sá, A. Matos, J. Bernardes

Faculdade de Engenharia da Universidade do Porto, Hospital de S. João, Dep. Ginecologia e Obstetrícia, Faculdade de Medicina da Universidade do Porto, Instituto de Engenharia Biomédica, Porto, Portugal

P.02 — A Recursive Filter for 3D MAP Reconstruction

João Sanches, Jorge S. Marques

Instituto Superior Técnico / Instituto de Sistemas e Robótica, Lisbon, Portugal

P.03 — User Interface Design and Evaluation of a DICOM Based Digital Mammography Workstation

Javier Quiles¹, Miguel Souto¹, Pablo G. Tahoces², Anxo Martínez de Alegría¹, Juan J. Vidal¹

¹Departamento de Radiología, Universidad de Santiago de Compostela, Spain

²Departamento de Electrónica y Computación, Fac. Física, Universidad de Santiago de Compostela, Spain

P.04 — Pollen Classification of Three Types of Plants of the Family Urticaceae

M.Damián¹, E.Cernadas¹, A. Formella¹, M. Pilar De Sa-Otero²

¹Departamento de Informática, Universidade de Vigo, Spain

²Departamento de Biología Vegetal e Ciencias do Solo, Universidade de Vigo, Spain

P.05 — Mitosis Detection Using the Hough Transform for Circles

P. G. Rodríguez¹, A. Lyazghi², D. Decaestecker³, O. Debeir², and P. Van Ham²

¹Área de Lenguajes y Sistemas Informáticos, Dpto. Informática, Univ. Extremadura, Spain

²Systemes Logiques et Numériques, Faculty of Applied Sciences, Univ. Libre de Bruxelles, Belgium

³Laboratory of Histopathology, Faculty of Medicine, Univ. Libre de Bruxelles, Belgium

P.06 — Texture Attributes for Segmentation of Cells in Light Microscopy

E. Glory^{1,2}, I. Boudoux², F. Clopper², V. Meas-Yedid¹, C. Zimmer¹

¹Laboratoire d'Analyse d'Images Quantitative, Institut Pasteur, Paris, France

²Laboratoire CRIP5-Sip, UFR Mathématiques et Informatique, Paris, France

P.07 — Histological Image Analysis by Color Image Segmentation Based on Markov Random Field Clustering

Sorin Tilie, Vannary Meas-Yedid, Jean-Christophe Olivo-Marin

Laboratoire d'Analyse d'Images Quantitatives, Institut Pasteur, Paris, France

P.08 — Preliminary Experimental Validation of the Absolute Coronary Blood Flow Measurement from Coronarographic Images Performed on the Artery Model

Hanna Goszczyńska¹, Leszek Kowalczyk¹, Piotr Bogorodzki², Tomasz Wolak², Robert Kurjata², Mateusz Orzechowski²

¹Institute of Biocybernetics and Biomedical Engineering PAS, Warsaw, Poland

²Nuclear and Medical Electronics Division, Warsaw University of Technology, Warsaw, Poland

P.09 — Objective Evaluation of Image Thresholding Techniques for Wounds

A. G. Deshpande¹, T. R. Sontakke²

¹Govt. Engg. College, Aurangabad, India

²SGGSCE Tech, Nanded, India

Thu 27th, 16:50–18:10 Signal Processing

P.01 — A New Geometrical Method of Blind Source Separation Based on a Lattice of the Space of Observations

M. Rodríguez-Álvarez, C. G. Puntonet, I. Rojas, A. F. Díaz, F. J. Fernández, M. Salmerón

Departamento de Arquitectura y Tecnología de Computadores, Escuela Técnica Superior de Ingeniería Informática, Universidad de Granada, Granada, Spain

P.02 — Gabor Filters Optimized by Simple Simulated Annealing

R. Oliveira, T. Candeias, L. Santos, H. Shahbazkia

Universidade do Algarve, Faro, Portugal

P.03 — Blind Source Separation of Temporally Correlated Signals

Nuno Ferreira, Ana Maria Tomé

Dep. Electrónica e Telecomunicações / IEETA, Universidade de Aveiro, Portugal

P.04 — Visualization of Articulatory and Acoustic Information on an Articulatory Synthesizer

Luís Nuno Silva, António Teixeira, Beatriz Sousa Santos

Departamento de Electrónica e Telecomunicações / IEETA, Universidade de Aveiro, Portugal

P.05 — Noise Power in PCM Image Transmission

J. Tavares, A. Navarro

Dep. of Telecommunications and Electronics Engineering, Telecommunications Institute, University of Aveiro, Portugal

Fri 28th, 9:00–10:40 Pattern Recognition

P.01 — Clustering Techniques for Marbles Classification

J. R. Caldas Pinto¹, P. Pina², V. Ramos², M. Ramalho¹

¹IDMEC/IST, Technical University of Lisbon, Instituto Superior Técnico, Lisbon, Portugal

²CVRM/Centro de Geo-Sistemas, Instituto Superior Técnico, Lisbon, Portugal

P.02 — A Classification Method for Ancient Hand-written Musical Symbols

Pedro Vieira, J. R. Caldas Pinto

IDMEC/IST, Technical University of Lisbon, Instituto Superior Técnico, Lisbon, Portugal

P.03 — Spectrographic Color in Image Analysis and Classification

António F. Limas Serafim

Electronic Department of INETI, Lisbon, Portugal

P.04 — Weighted Morphometric Shape Analysis of Diatoms

H. Shahbazkia, T. Candeias, R. Oliveira, L. Santos, F. Tomaz

Universidade do Algarve – UCEH, BIF Laboratory, Faro, Portugal

P.05 — Applying Local Features when Identifying Text in Documents

José Eduardo B. dos Santos^{1,2}, B. Dubuisson¹, Flávio Bortolozzi²

¹HEUDIASYC, Université de Technologie de Compiègne, Compiègne, France

²LUCI²A, Pontifícia Universidade Católica do Paraná, Curitiba, Brasil

P.06 — On Computational Complexity of Non-Reducible Descriptors

Ventzeslav Valev, Asai Asaithambi

Department of Computer Science, Parks College of Engineering and Aviation, Saint Louis University, St. Louis, MO, USA

P.07 — Image Texture Segmentation Using Linear Filter Based Features and Network of Synchronised Oscillators

Michal Strzelecki

Institute of Electronics, Technical University of Lodz, Lodz, Poland

P.08 — Use of Logistic Discrimination to Classify Remotely-Sensed Digital Images

Hélio Radke Bittencourt¹, Robin Thomas Clarke²

¹Laboratório de Estatística - ULBRA, Canoas, Brasil

²Centro de Sensoriamento Remoto - UFRGS, Porto Alegre, Brasil

Fri 28th, 14:00–15:40 Image and Video

P.01 — Video Coding by Applying the Extension of EZW to 3D and the Lifting Scheme

José Salgado¹, Leonel Sousa²

¹Electronics Depart., EST/PCB, Castelo Branco, Portugal

²DEEC-IST / INESC-ID, Lisbon, Portugal

P.02 — Generic Framework for Video Analysis

Luís Filipe Tavares¹, Luís Teixeira^{1,2}, Luís Corte-Real^{1,3}

¹Instituto de Engenharia de Sistemas e Computadores do Porto, Portugal

²Universidade Católica Portuguesa, Porto, Portugal

³Faculdade de Engenharia da Universidade do Porto, Portugal

P.03 — MPEG-4 Natural Video Parallel Implementation on a Cluster

Miguel Ribeiro, Oliver Sinnen, Leonel Sousa

IST/INESC-ID, Lisbon, Portugal

P.04 — Improving the JPEG-LS Compression of Images With Locally Sparse Histograms

António J. R. Neves, Armando J. Pinho

Dept. of Electronics and Telecommunications / IEETA University of Aveiro, Portugal

P.05 — Constrained Waterfall Method on Image Segmentation

Fernando J. A. Pina Soares

Departamento de Matemática, Faculdade de Ciências da Universidade de Lisboa, Lisbon, Portugal

P.06 — A Fully Automatic Method for Image Rectification of AVHRR Satellite Data

André R. S. Marçal, Janete Borges

Faculdade de Ciências, Universidade do Porto, Porto, Portugal

P.07 — Cadastral Map Analysis: Simple Methods, Good Results

R. Oliveira, T. Candeias, F. Tomaz, H. Shahbazkia

Universidade do Algarve, Faro, Portugal

P.08 — A Region Merging Method for Watershed Oversegmentation Using Quadrees

Antonio S. Montemayor, Ángel Sánchez

Dept. Ciencias Experimentales e Ingeniería, ESCET, Universidad Rey Juan Carlos, Madrid, Spain

P.09 — Mathematical Morphology: Features Extraction from Orbital Images

E. A. da Silva, T. Statella

São Paulo State University, Department of Cartography, São Paulo, Brazil

Fri 28th, 16:00–17:30 Computer Vision

P.01 — Tele-3D — Developing a Handheld Scanner Using Structured Light Projection

João Filipe Ferreira, Jorge Lobo, Jorge Dias

Institute of Systems and Robotics, Departamento de Engenharia Electrotécnica, Universidade Coimbra, Portugal

P.02 — Multiresolution Scheme for Stereo Correspondence Using Correlation Techniques

Rosana Satorre, Patricia Compañ, Antonio Botía, Ramón Rizo

Grupo VGIA: Visión, Gráficos e Inteligencia Artificial, Departamento de Ciencia de la Computación e Inteligencia Artificial, Universidad de Alicante, Spain

P.03 — Location of Eyes in Face Images

Nuno Valentim^{1,2}, André Melo², Aurélio Campilho^{1,2}

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² Departamento de Engenharia Electrotécnica e de Computadores, Universidade do Porto, Faculdade de Engenharia, Portugal

P.04 — Segmentation of Moving Images

Pedro Quelhas, Miguel Correia, Aurélio Campilho

INEB - Instituto de Engenharia Biomédica / Faculdade de Engenharia Departamento de Engenharia Electrotécnica e de Computadores, Universidade do Porto, Portugal

P.05 — Adaptive Tracking of Moving Objects in Colour Video Sequences

Ayoub Al-Hamadi, Bernd Michaelis

Institute for Electronics, Signal Processing and Communications (IESK), Otto-von-Guericke-University Magdeburg, Magdeburg, Germany

P.06 — A Principle Component Based BDNN for Face Recognition

H. T. Pao

Department of Management Science, National Chiao-Tung University, Hsinchu, Taiwan, ROC

P.07 — Design of Face Recognition System (Implementing Face Detection & Various Face Recognition Algorithms)

S. K. Singh, Mayank Vatsa, Richa Singh

Department of Computer Sc. & Engg., Institute of Engg. & Tech., Purvanchal University, Jaunpur, India