

CURRICULUM VITÆ

Ana Isabel Pereira Martins Leiria

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1 PERSONAL INFORMATION

1.1 Personal data

Full Name: Ana Isabel Pereira Martins Leiria

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1.2 Current job category

Assistant Professor in the Department of Electronic Engineering and Informatics (<http://deei.fct.ualg.pt/>), Faculty of Science and Technology, University of Algarve.

1.3 Education

1.3.1 Academic degrees

Five years degree in Decision Systems Engineering, Cocite, C.R.L. – Cooperativa de Ensino Superior de Técnicas Avançadas de Gestão e Informática, obtained on September 1993 with the final average of 14 (Max. 20)..

Doctor degree in Electronic Engineering and Computer Science, specialty of Signal Processing from University of Algarve, with in January 2005, with the thesis “Spectral Analysis of Embolic Signals”.

1.3.2 Other qualifications

Exam of Pedagogical Aptitude and Scientific Capacity in the subject group of Signal Processing in University of Algarve, July 2000. (equivalent to a MSc degree for advancement in an academic career)

1.4 Current research and development interests

Signal, image and multimedia processing. Practical applications to Health Sciences, Automated Border Crossing Systems and Tourism.

1.5 Non-academic professional experience

Between March 1992 and July 1993: Superior technician, Telefones de Lisboa e Porto, S.A. (TLP), Directorate of Strategic Planning and Participated Companies, Department of Economic Studies.

2 ACADEMIC ACTIVITIES

2.1 Current activities

Activities in the Department of Electronic Engineering and Informatics, Faculty of Science and Technology of the University of Algarve

From October 1993 to September 1997: Junior lecturer

From October 1997 to July 2000: Guest lecturer

From July 2000 a January 2005: Lecturer

From July 2005: Assistant professor

2.2 Pedagogical activity

2.2.1 Subjects lectured

From 2005 lectured the following courses:

Signals and systems; Complements of Signal Processing; Image processing; Telemedicine; Human Computer Interaction; Ultrasounds; Complements of Ultrasounds.

Also participated in the lecture of the courses:

Operating Systems; Imperative programming; Computer architecture; Probability, statistics and stochastic processes.

Other courses lectured from 1993 to 2005:

Lectured: Applied mathematics; Systems programming.

Participated in: Digital Signal Processing; Image and Signal Processing; Programming Languages; Introduction to Computing and Programming.

2.2.2 Supervision

PhD degree

Fernando Luís Almeida (starting in January 2010), “Integrated System for Environment and Organizational Management”. PhD in Management of Tourism Organizations. FE, University of Algarve. Co-supervision with Prof. Doutor João Albino da Silva

Master degree

Ivo Gonçalves (ongoing), “Embolic signals characterization”. Master course in Electronic Engineering and Telecommunications. DEEI/FCT, University of Algarve. Co-supervision with Prof. Doutora Maria Margarida Madeira e Moura.

Rute Canarias (2010), “Embolic signals characterization”. Master course in Medical Imaging. FCT, University of Algarve. Co-supervision with Dr^a Teresa Leonor Figueiredo.

Undergraduate students

Also supervised the final year projects of 24 students from the University of Algarve (DEEI/FCT), and co-supervised the final year projects of three Erasmus students from the University of Algarve in Gjøvik University College, Gjøvik, Norway.

2.2.3 General management activities

Member of the Organizing Committee of BioEng'2001 - Sixth Portuguese Conference on Biomedical Engineering, University of Algarve, June 11th 12th 2001.

Member of the Organizing Committee of WISP2005 – IEEE Symposium in Intelligent Signal Processing, University of Algarve, September 1st - 3rd 2005.

Member of the Coordinating Committee of the second edition of the Master Course on Medical Imaging, 2005-2006, Science and Technology Faculty of University of Algarve..

2.3 Research activities

2.3.1 Participation in research teams

Member of RITUL/CYTED network (1998-2001).

Member of the research group GPSBio - Grupo de Processamento de Sinal Biomédico (Biomedical Signal Processing Group), from 1998 onwards. As member of GPSBio, joined the research unit CSI – Centro de Sistemas Inteligentes (Centre for Intelligent Systems) of the University of Algarve between 2001 and 2007.

In December 2008 jointed the newly created Centro de Investigação em Turismo e Lazer (Center for Investigation in Tourism and Leisure) of the University of Algarve.

2.3.2 Participation in projects

“Spectral Estimation of Pulsed Doppler Ultrasound Signals Aiming the Detection of Diseased Blood Vessels”, (1995/96) in cooperation with University College of North Wales with the financial support of Treaty of Windsor Joint Research Programme (B-93/95).

“Sistema de Análise de Fluxo Sanguíneo (Blood flow analysis system)”, (1998) financed by Fundação para a Ciência e a Tecnologia PRAXIS (P/EEI/12123/1998).

“Analysis of Doppler Embolic Signals Using Non-Stationary Spectral Estimators”, (2000/01) in cooperation with Department of Medical Physics of the University of Leicester with the financial support of Treaty of Windsor Joint Research Programme (B-43/00).

“Analysis of Doppler Embolic Signals Using Non-Stationary Spectral Estimators”, (2002/03) in cooperation with Department of Medical Physics of the University of Leicester with the financial support of Treaty of Windsor Joint Research Programme (B-35/02).

As member of CYTED/RITUL network, participated in the project MAGIAS - Métodos Avançados de Geração de Imagens Acústicas (2000/03), financed by UNESCO (3304-3307).

Member of the Portuguese team in the consortium research project SUCoDIC - desarrollo de Sistemas Ultrasónicos y Computacionales para Diagnóstico Cardiovascular (Development of ultrasonic and computer systems for cardiovascular diagnosis) (2006/2009) financed by CYTED (506PIC0295), UNESCO project 2201-09, 2203-09, 2205-03, 2406-03, 3207-04, 3307-22, 3311-10.

Member of the team of the project “Modelação e Monitorização da Qualidade nos Destinos Turísticos” (Modeling and monitoring the quality of tourism destinations), being developed in Centro de Investigação em Turismo e Lazer of the University of Algarve.

2.3.3 Prizes and awards

2008 - Member of the project “Modelação e Monitorização da Qualidade nos Destinos Turísticos”, that was distinguished with the Prémio Ceratonia 2008, in the Economics and Management scientific area

2009 - “Recognition as one of the outstanding reviewers of 2008” by IEEE – The Instrumentation and Measurement Society

2010 - “Recognition as one of the outstanding reviewers of 2009” by IEEE – The Instrumentation and Measurement Society

2.3.4 Technological transfer and services rendered

Co-supervision with Prof. Doutora Maria Margarida Madeira e Moura of Monitoring and assessing the pilot of RAPID (Reconhecimento Automático de Passageiros Identificados Documentalmente – Automatic Identification of Passengers Holding Travelling Documents), a project concerning e-passports designed by the Immigration and Borders Service of Portugal (SEF) (<http://www.rapid.sef.pt/>). The monitoring phase of RAPID occurred between 25 of May and 24 of June, 2007. The team included 20 students enrolled in the courses of the Electronic Eng. and Informatics Department. After the conclusion of the of the monitoring phase, on request by SEF, the system use was further accompanied by 16 students from 4 of July until the end of August of 2007.

Co-supervision with Prof. Doutora Maria Margarida Madeira e Moura of Monitoring and assessing the second generation RAPID system (ongoing). The team includes 8 students enrolled in the courses of the Electronic Eng. and Informatics Department. This work aims to contribute to a forthcoming technical study and evaluation of the RAPID system being done in cooperation with SEF, JRC and FRONTEX.

3 PUBLICATIONS

3.1 Thesis

Leiria Ana, *Spectral Analysis of Embolic Signals*, (Study of behavior of the local and regional traffic originated in TLP), thesis submitted for the Doutoramento em Engenharia Electrónica e Computação, specialty Signal Processing, University of Algarve, January 2005

3.2 Book chapters

Leiria Ana, Moura M. M. M. Analysis of Doppler Embolic Signals, in *Biomedical Diagnostics and Clinical Technologies: Applying High-Performance Cluster and Grid Computing*, Manuela Pereira and Mario Freire (ed.), Idea-Group Inc., NY, 2010 (in print).

3.3 Papers in international scientific periodicals with referees

Moura Maria Margarida Madeira, Leiria Ana, Ruano M. Graça, *Adaptive System for Blood Flow Estimation*, IEEE Trans. on Instrumentation & Measurement, Vol. 7, No.6, pp. 2220-2226, December 2005.

Leiria Ana, Moura M. M. M., Evans David H., Ruano M. Graça, *Time-Variable Blood Flow Averaged Waveforms*, International Journal of Systems Science, Vol.37, No.8, pp. 535-541, Junho 2006.

Moura M. M. M., Lima Valter, Mendes Júlio, Leiria Ana, Silva João Albino, *Sistema para a Partilha de Informação Turística em Países de Expressão Portuguesa*, Encontros Bibli: Revista Electrónica de Biblioteconomia e Ciência de Informação, 2^o sem. 2008. <http://www.periodicos.ufsc.br/index.php/eb/article/view/9406/8670>

3.4 Papers in conference proceedings

Leiria Ana, Madeira M. Margarida, Ruano M. Graça, *Aortic Valve Analyser: A Cost/Benefit Study*, ICSPAT'99 (International Conference on Signal Processing Applications and Technology), 325.PDF, CD-ROM, Orlando, USA, November 1999.

Matos Sérgio, Leiria Ana, Ruano M. Graça, *Blood Flow Parameters Evaluation Using Wavelet Transforms*, World Congress on Medical Physics and Biomedical Engineering, 4235-52803.pdf, CD-ROM, Chicago, USA, July 2000.

Leiria Ana, Moura M. M. M., Ruano M. Graça, *Comparison of Discrete Choi-Williams Based Distributions on Aortic Valve Blood Flow Centre Frequency and Bandwidth Estimation*, BioEng'2001 (Sixth Portuguese Conference on Biomedical Engineering), ID48.pdf, CD-ROM, Faro, Portugal, June 2001.

Moura M. M. M., Leiria Ana, Ruano M. Graça, *Fast Calculation of the Bessel Time-Frequency Distribution*, Proceedings da b'02 IFAC World Congress, P1252.pdf, CDROM, Barcelona, Spain, July 2002.

Ruano M. Graça, Moura M. M. M., Leiria Ana, García F., Moreno E., *A Framework for Blood Flow Analysis and Research*, Proc. of EMBC2003 – Engineering in Medicine and Biology Conference, P3165.pdf, CDROM, Cancun, Mexico, September 2003.

Moura M. M. M., Leiria Ana, Ruano M. Graça, *Adaptive System for Blood Flow Estimation*, Proc. of WISP 2003 - IEEE Workshop in Intelligent Signal Processing, pp. 121-125, Hungary, September 2003.

Leiria Ana, Moura M. M. M., Ruano M. Graça, *Time-Variable Blood Flow Averaged Waveforms*, Controlo 2004 - Sixth Portuguese Conference on Automatic Control, Vol. 2, pp. 625-629, Faro, Portugal, June 2004.

Leiria Ana, Moura M. M. M., Solano Julio, Ruano M. Graça, Evans David H., *Middle Cerebral Artery Blood Flow: Accurate Time-Frequency Evaluation*, Anais do IIICLAEB'2004/XIXCBEB'2004 - Conferência Latino-Americana de Engenharia Biomédica, pp. 1095-1098, João Pessoa, Brasil, September 2004.

Moura M. M. M., Leiria Ana, Ruano M. Graça, Evans David H., *"Analytic" Approximation of Doppler Ultrasound Blood Flow Signals*, Proc. da WISP 2005 - IEEE Workshop in Intelligent Signal Processing, pdf0069.pdf, CDROM, Faro, Portugal, September 2005.

Leiria Ana, Moura M. M. M., Ruano M. Graça, Evans David H., *Time, Time-Frequency and Displacement-Frequency Analysis of Embolic Signals*, Proc. da WISP 2005 - IEEE Workshop in Intelligent Signal Processing, pdf0009.pdf, CDROM, Faro, Portugal, September 2005.

Moura M. M. M., Mendes Júlio, Leiria Ana, Silva João Albino, Chaveiro Tony, *Integração das Novas Tecnologias de Informação na Construção de Redes de Partilha de Informação no Sector Turístico*, Actas do III Congresso sobre Planeamento e Gestão das Zonas Costeiras dos Países de Expressão Portuguesa - Perspectivas de Gestão e Sustentabilidade da Zona Costeira, 38.pdf, CDROM, Maputo, Mozambique, October 2005.

Moura M. M. M., Moura L., Leiria Ana, *Comparison of Analytic Signal Usage on Doppler Blood Flow Signals Estimation*, Proc. da WISP 2007 - IEEE Workshop in Intelligent Signal Processing, pp.39-42, Alcalá de Henares, Spain, October 2007.

Leiria Ana, Ruano M. Graça, Evans David H., *Displacement-Frequency Doppler Blood Flow Estimation*, Proc. da WISP 2007 - IEEE Workshop in Intelligent Signal Processing, pp.249-252, Alcalá de Henares, Spain, October 2007.

Fernandes Laurinda, Cabrita Ana, Morais Marco, Leiria Ana, Moura M. M. M., *Diet Everywhere - From a Diet Assistant to a Telemedicine Solution*, Reflection Paper, Proc. da IADIS WWW/Internet 2007, pp.297-300, Vila-Real, Portugal, October 2007.

Daniel H. A., Moura M. M. M., Leiria Ana, *Intensive Software Testing and Evaluation on a Grid*, Research, Reflections and Innovations in Integrating ICT in Education: Proceedings Book of the V International Conference on Multimedia and ICT in Education (m-ICTE2009), Vol.3, pp. 1353-1357, Lisboa, Portugal, April 2009.

3.5 Communications

3.5.1 Oral communications by invitation

Leiria Ana, “Análise de fluxo sanguíneo” (Blood flow signal analysis), seminar on “Sinais, Equações e suas Interpretações” (Signals, equations and their interpretation), Master course in Medical Imaging, FCT, University of Algarve, Faro, April 2004.

Leiria Ana, “Elasticidade Tecidual Medida por Ecografia em Tempo-Real” (Tissue elasticity measured by echography in real-time), Master course in Medical Imaging, FCT, University of Algarve, Faro, June 2006.

Leiria Ana, “Esteganografia e Marcas de Água Aplicadas a Dados Médicos”(Steganography and Watermarking Applied to Medical Data), Master course in Medical Imaging, FCT, University of Algarve, Faro, June 2006.

3.5.2 Other oral communications

Leiria Ana, Madeira M. Margarida, Ruano M. Graça, *Kernel Modified Choi-Williams Distributions on Blood Flow Evaluation*, WSPMU (Workshop on Signal Processing in Medical Ultrasound), UTAD, Vila-Real, September 2000.

Leiria Ana, Ruano M. G., Evans D. H., *Blood Flow Signals Characterization*, 12th New England Doppler Conference, Artimino, Italy, May 2003.

3.6 Posters in conferences

Magalhães I. R., Leiria Ana, Paiva Ana, *An Interactive Tool for Learning Ultrasound*, GETS 2006 (Global Educational Technology Symposium), University of Algarve, Faro, July 2006.

Martins F., Ramos A., Moura M. M. M., Leiria Ana, *An E-Course on Distance Teaching*, GETS 2006 (Global Educational Technology Symposium), Universidade of Algarve, Faro, July 2006.

Duro João, Duarte João, Leiria Ana, Moura M. M. M., *Mobile Buisness by the Sea*, IADIS Multi Conference on Computer Science and Information Systems (MCCSIS 2007), 062.pdf, CDR0M, Lisboa, Portugal, July 2007.

3.7 Technical reports

Leiria Ana, *Estudo do Comportamento do Tráfego Local e Regional Originado nos TLP* (Study of behavior of the local and regional traffic originated in TLP), Last Year Project Report for obtaining the degree in Decision Systems Engineering, COCITE, Lisboa, Portugal, June 1993.

Leiria Ana, *Euações Diferença de Coeficientes Constantes* (Difference Equations with Constant Coefficients), Theoretical-practical report in the scope of the Pedagogical Aptitude and Scientific Capacity exam, ADEEC, UCEH, University of Algarve, Portugal, July 2000.

Leiria Ana, *Estimação Espectral do Sinal Doppler Ultrassom em Válvula Aórtica* (Aortic Valve Doppler Ultrasound Signal Spectral ESTimation), Scientific report in the scope of the Pedagogical Aptitude and Scientific Capacity exam, ADEEC, UCEH, University of Algarve, Portugal, July 2000.

Leiria Ana, Moura M. M. M., *Fronteira Electrónica -Avaliação e monitorização do piloto do Sistema de Controlo Electrónico de Fronteira com o Sistema de Reconhecimento Automático de Passageiros Identificados Documentalmente* (Electronic Border – Evaluation and monitoring of the pilot of the Electronic Broder Control System for Automatic Identification of Passengers Holding Travelling Documents), report for the Immigration and Borders Service of Portugal (SEF), July 2007.

3.8 Other publications

Moreira Stephanie, Leiria Ana, Madeira M. Margarida, Ruano M. Graça, *“Processamento de Sinais em Tempo-Real: Desafios e Constrangimentos”* (Real time signal processing: challenges and constraints), Jornadas Iberoamericanas de Ultrasonidos, Cartagena das Índias, Colombia, Maio 1998, (<http://www.iai.csic.es/ritul>).