

Curriculum Vitae

Personal Information

First Name	Pantelis
Last Name	Bouboulis
Citizenship	Greek
Date of Birth	23/02/1976
Address	Serfiotou 86-88 Piraeus
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Academic Records

1993 – 1998	B.Sc, from the Department of Mathematics of the University of Athens, Greece.
1999 – 2002	M.Sc. in Signal Processing from the Department of Informatics and Telecommunications of the University of Athens, Greece.
2002 – 2006	Ph.D. from the Department of Informatics and Telecommunications of the University of Athens, Greece. Thesis: Fractal Interpolation Surfaces. Theory and application in image compression. Supervisors: S. Theodoridis, L. Dalla, Th. Theoharis.

Member of

- 1) Institute of Electrical and Electronics Engineers (IEEE)

Research Interests

Fractals, Wavelets, Image processing, Approximation and Interpolation theory, Support Vector Machines, Learning with Kernels.

Foreign Languages

- A) English (Level: Advanced). TOEIC score 990/990.

Working and Teaching Experience

- 1997 – 1998 Assitant at the Computers Lab of the Department of Mathematics of the University of Athens. Courses: Informatics, Data Structures..
- 1998 – 2006 Teacher in several private high schools in Greece.
- 2002 – 2006 Teaching exercises for the Course “Analysis I” at the Department of Informatics and Telecommunications of University of Athens.
- 2006 – 2007 Mandatory Service in the Greek Army.
- 2007 – 2008 Assistant Professor at the Department of Informatics and Telecommunications of University of Athens
- 2008 – Today Teaching Mathematics in Greek High Schools.

Special Skills

Working Knowledge in several computer languages such as C/C++, Pascal, Matlab, Mathematica, e.t.c...

Distinctions and Scholarships

- 1993 9th place in the competition of the Greek Physicists Society for highschool students.
- 1994 Scholarship from the Greek National Scholarships Foundation (IKY).
- 2010 **Best Scientific Paper Award** at ICPR 2010, Istanbul: Turkey, 23-26 August 2010, for the paper «Edge Preserving Image Denoising in Reproducing Kernel Hilbert Spaces».
<http://www.icpr2010.org/awards.php>
- 2012 - Serving as an **Associate Editor** for the international journal “IEEE Transactions on Neural Networks and Learning Systems”.
- 2012 - Serving as an **Associate Editor** for the Greek journal of HMS :”Euclid C”.

Research Projects

- 1) **Title:** Enhancement of courses for the Department of Informatics (K.A. 70/3/6864)
Duration: 1/10/2003 – 30/11/2004
Institution: Greek Ministry of Education
Supervisor: S. Theodoridis
Tasks: Development of internet-based educational material

- 2) **Title:** Construction of a database of high quality digital mamographic images and an internet portal for its public distribution to the academic world.
Duration: 2010-2011
Institution: John S.Latsis Public Benefit Foundation
<http://www.latsis-foundation.org/gr/14/meletes.html>
- 3) **Title:** ASSURANCE
Duration: 2013-2015
Institution: National and Kapodestrian University of Athens, ARISTEIA

Publications

Papers in refereed journals

- 1) P. Bouboulis, L. Dalla, Hidden Variable Vector Valued Fractal Interpolation Functions, *Fractals*, Vol. 13, No. 3 (2005), 227-232.
- 2) P. Bouboulis, L. Dalla, V. Drakopoulos, Construction of Recurrent Bivariate Fractal Interpolation Surfaces and Computation of their Box-Counting Dimension, *Journal of Approximation Theory*, Vol. 141, No 2 (2006), 99-117.
- 3) P. Bouboulis, L. Dalla, V. Drakopoulos, Image Compression Using Recurrent Bivariate Fractal Interpolation Functions, *International Journal of Bifurcation and Chaos [in Applied Sciences and Engineering]*, Vol. 16, No. 7 (2006) 2063-2071.
- 4) P. Bouboulis, L. Dalla, Closed Fractal Interpolation Surfaces. *Journal of Mathematical Analysis and Applications*, Vol. 327, No. 1 (2007) 116-126.
- 5) P. Bouboulis, V. Drakopoulos, S. Theodoridis, Image Compression Using Affine Fractal Interpolation Surfaces on Rectangular Lattices, *Fractals* Vol. 14, No. 4 (2006).
- 6) P. Bouboulis, Pseudo Random Number Generation with the aid of Iterated Function Systems on \mathbb{R}^2 . *International Journal of Modern Physics C*, Vol. 18, No 5 (2007), 861-882.
- 7) P. Bouboulis, L. Dalla, A General Construction of Fractal Interpolation Functions on Grids of \mathbb{R}^n . *European Journal of Applied Mathematics*, Vol 18 (2007), 449-476.
- 8) P. Bouboulis, L. Dalla, Fractal Interpolation Surfaces Derived from Fractal Interpolation Functions. *Journal of Mathematical Analysis and Applications*, Vol. 336 (2007) 919–936.
- 9) P. Bouboulis, L. Dalla, M. Kosta Construction of Smooth Fractal Surfaces Using Hermite Fractal Interpolation Functions, *Bull. Of the Greek Math. Soc* Vol 54 (2007), 179-196.
- 10) P. Bouboulis, Construction of Orthogonal Multi-Wavelets using Generalized-Affine Fractal Interpolation Functions, *IMA Journal of Applied Mathematics*, Vol. 74 no. 6 (2009), 904-933.
- 11) P. Bouboulis, Construction of Fractal surfaces via solutions of Partial Differential Equations, *SRX Mathematics*, vol. 2010, Article ID 432521, 2010. doi:10.3814/2010/432521.

- 12) P. Bouboulis, Modelling Discrete Sequences with Fractal interpolation Functions of higher order, *Journal of Mathematical Sciences: Advances and Applications*, Vol. 4 No. 1 (2010), 171 – 189.
- 13) P. Bouboulis, K. Slavakis and S. Theodoridis, Adaptive Kernel-based Image Denoising employing Semi-Parametric Regularization, *IEEE Transactions on Image Processing*, vol 19(6), 2010, 1465 – 1479.

This article was second in number of clicks at the official site of the journal *IEEE Transactions on Image Processing* for the months June and July. Moreover the related article which was presented at ICPR 2010 (20th International Conference on Pattern Recognition) was selected for the **Best Scientific Paper Award**.

- 14) P. Bouboulis, and S. Theodoridis. Extension of Wirtinger's Calculus to Reproducing Kernel Hilbert Spaces and the Complex Kernel LMS, *IEEE Transactions on Signal Processing*, vol 59(3), 2011, 964 - 978..
- 15) P. Bouboulis and M. Mavroforakis, Reproducing Kernel Hilbert Spaces and Fractal Interpolation, *Elsevier's Computational and Applied Mathematics*, 235 (2011), 3425-3434.
- 16) K. Slavakis, P. Bouboulis and S. Theodoridis, Adaptive multiregression in Reproducing Kernel Hilbert Spaces: The multiaccess MIMO channel case, *to appear in IEEE Transactions on Neural Networks and Learning Systems* (17 pages).
- 17) P. Bouboulis, K. Slavakis and S. Theodoridis, Adaptive Learning in Complex Reproducing Kernel Hilbert Spaces employing Wirtinger's subgradients, *to appear in IEEE Transactions on Neural Networks and Learning System* (15 pages).
- 18) P. Bouboulis, S. Theodoridis and M. Mavroforakis, The Augmented Complex Kernel LMS, *to appear in IEEE Transactions on Signal Processing* (4 pages).

Papers in Conferences' Proceedings

- 1) K. Slavakis, P. Bouboulis, and S. Theodoridis. Online kernel receiver for multi-access MIMO channels. In Proceedings of the IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), pp. 221—224, Perugia: Italy, June 21-24, 2009
Link: <http://ewh.ieee.org/conf/spawc/2009/brochure.pdf>
- 2) P. Bouboulis, K. Slavakis and S. Theodoridis. Edge Preserving Image Denoising in Reproducing Kernel Hilbert Spaces, Proceedings of the 20th International Conference on Pattern Recognition, Istanbul: Turkey, 23-26 August 2010.

This paper was selected for the **Best Scientific Paper Award** (Track III: Signal, Speech, Image and Video Processing).
<http://www.icpr2010.org/awards.php>

- 3) P. Bouboulis and S. Theodoridis, Extension of Wirtinger Calculus in RKH spaces and the Complex Kernel LMS, 2010 IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2010), August 29 - September 1, 2010 Kittilä, Finland

- 4) P. Bouboulis and S. Theodoridis, The Complex Gaussian Kernel and the Complex Kernel LMS algorithm, 20th International Conference on Artificial Neural Networks (ICANN 2010), September 15-18, 2010, Thessaloniki, Greece.
- 5) P. Bouboulis, S. Theodoridis, M. Mavroforakis, Widely Linear Kernel-based Adaptive Filters, EUSIPCO 2011, August 29 - September 2, Barcelona, Spain.
- 6) P. Bouboulis, S. Theodoridis, Ch. Mavroforakis, Complex Support Vector Regression, CIP 2012, May 28 - 30, Parador de Baiona, Spain.
- 7) P. Bouboulis, E. Theodoridi, S. Theodoridis, Complex Support Vector Machines For Quaternary Classification, MLSP 2013, September 22 - 25, Southampton, United Kingdom.
- 8) G. Papageorgiou, P. Bouboulis, S. Theodoridis, Robust Kernel-Based Regression Using Orthogonal Matching Pursuit, MLSP 2013, September 22 - 25, Southampton, United Kingdom.

Participation in Conferences (without Proceedings)

- 1) International Conference and Summer School, Complexity in Science and Society, July 2004, Ancient Olympia.
- 2) 10^o Pan-Hellenic Conference of Mathematical Analysis, October 2004, Athens.
- 3) International Conference on Modern Mathematical Methods in Science and Technology, Σεπτέμβριος 2006, Πάρος.
- 4) 12^o Pan-Hellenic Conference of Mathematical Analysis, May 2008, Athens.

Reviewer

Journal Reviews

- 1) Journal of the Franklin Institute (1)
- 2) Journal of Inequalities and Applications (1)
- 3) IET Image Processing (5)
- 4) Computers and Mathematics with Applications (2)
- 5) Acta Applicandae Mathematicae (1)
- 6) Journal of Mathematical Analysis and Applications (1)
- 7) IEEE Transactions on Neural Networks (5)
- 8) Journal of Approximation Theory (1)
- 9) Applied Mathematics Letters (1)
- 10) Chaos Solitons and Fractals (1)
- 11) Pattern Recognition (1)
- 12) Computational and Applied Mathematics (2)
- 13) IEEE Transactions on Signal Processing (2)
- 14) IEEE Transactions on Image Processing (2)
- 15) Signal Processing (1)
- 16) Fractals
- 17) IJAIT

Conferences Reviews

- 1) EUSIPCO 2008. (1)
- 2) 19th International Conference on Pattern Recognition 2008. (1)
- 3) 2010 IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2010) (2)

Reviewer for the Mathematical Reviews of the American Mathematical Society (AMS). (10 reviews)

Participation in supervising of Master Theses

- 2007 Maria Kostaki-Kosta, *Hermite Fractal Interpolation Functions and IFS in Sets, Functions and Surfaces*. Department of Mathematics of the University of Athens.
- 2008 G. Golias, *Fractal Interpolation and moments of bivariate Fractal interpolation functions*. Department of Mathematics of the University of Athens.
- 2012 N. Mitsakos, *Applications of Functional Analysis in Machine Learning*, Department of Mathematics, University of Athens.