



Dr. Yiannis S. Boutalis received the diploma of Electrical Engineer in 1983 from Democritus University of Thrace (DUTH), Greece and the PhD degree in Electrical and Computer Engineering in 1988 from the Computer Science Division of National Technical University of Athens, Greece.

Since 1996, he serves as a faculty member, at the Department of Electrical and Computer Engineering, DUTH, Greece, where, after serving as a Lecturer, Assistant Professor and Associate Professor he is currently Professor and director of the Automatic Control Systems &

Robotics Lab. In the past, he served as an assistant visiting professor at University of Thessaly (PD 407), Greece, and as a visiting professor (under contract) in Air Defence Academy of General Staff of airforces of Greece. He also served as a researcher in the Institute of Language and Speech Processing (ILSP), Greece, and as a managing director of the R&D SME Ideatech S.A, Greece, specializing in pattern recognition and signal processing applications. Dr. Boutalis has developed international cooperation with 6 foreign Universities and Research Institutes and has been several times a visiting scholar at Erlangen Nuremberg University of Germany, chair of Automatic Control.

His current research interests are focused in the development of Computational Intelligence Techniques with applications in Control, Renewable Power Generation, Electrical Machines, Robotics, Pattern Recognition, Signal and Image Processing Problems.

Dr. Boutalis teaches undergraduate and postgraduate lessons in the fields of Automatic Control, Robotis and Computational Intelligence Techniques. He has written 3 books (in Greek) for supporting his teaching work and he is co-author in 2 books and 14 book chapters published by international houses. He has published more than 160 papers in international scientific Journals and proceedings of international conferences..

Dr. Boutalis has supervised a number of completed PhD and Master dissertations (15 until 2016 – 7 Phds, 8 Masters) and is currently supervising a number of PhD and Master dissertations being in progress.

[Current Job address](#)

[Education](#)

[Academic and other job positions](#)

[Teaching Experience](#)

[Master and PhD students](#)

[Research and Cooperations](#)

[Books – chapters in Books](#)

[Publications \(Journals\)](#)

[Publications \(Conferences\)](#)

Current job address:

Democritus University of Thrace

Department of Electrical and Computer Engineering

Automatic Control Systems Laboratory

GR 67 100 XANTHI, GREECE

Tel/Fax. +30 25410 79504, 79512, e-mail: ybout@ee.duth.gr

Education

1977: Graduation from 2nd lyceum of Piraeus.

1983: Diploma of Electrical Engineer. Polytechnic school, University of Thrace, Greece.

1988: PhD with topic "Fast Space Adaptive Techniques with Applications on Digital Image Processing", Computer Science Division, National Technical University of Athens (NTUA).

Scholarships

1984: Scholarship holder (after examinations) of the National Scholarship Foundation for postgraduate studies (IKY) (1984-1987).

Awards

1997: Award from the "Panhellenic Association of the Blind" for my contribution to the creation of the "Vocal Reader", a software comprising OCR and Speech Synthesis Technologies helping blind people read written texts.

BPA: Best Paper Awards (see list of Publications).

Academic Positions

1992 - 1993:

Researcher in the Institute for Language and Speech Processing (ILSP, under the auspices of the ministry of industry and the General Secretariat of Research and Technology), Greece.

1991 - 1994:

Visiting Professor in Air Defence Academy of General Staff of airforces of Greece.

1994 - 1995 (one semester):

Assistant Professor at University of Thessaly (Greece).

12/1995 - now

Lecturer, Assistant Professor, Associate Professor and Professor - Democritus University of Thrace, Automatic Control Systems Laboratory, Currently Head of the LAB.

11/2015 - now

Head of the Department of Electrical and Computer Engineering, Democritus University of Thrace, Greece.

Professional activities in the private sector.

1989- 1991:

Contributor to the R&D department of "*Noesis Systems Ltd.*", Athens, Greece. There was involvement in

- Computer Graphics and Graphical Interfaces.
- Compression decompression and coding of binary and grey images. (CCITT G3, G4 and GIF standards were implemented).
- Digital Halftoning (Dithering)

1991- 1995:

Managing Director of "*Ideatech s.a*", an R&D SME in Athens, Greece and head on some of the projects of its R&D department. More specifically there was involvement in

- Development of a reliable Optical Character Recognition (OCR) system for the Greek and the other European Languages. (It resulted in the production of "*Anagnostis*", which was for many years the best and best selling OCR product in the Greek market. It was also used by TRASYS s.a (Belgium) for OCRing the texts of the official newspaper of the E.U)
- Development of an Optical filing system (along with Image Processing tools) for the management of multimedia information. (The JPEG standard and some colour dithering techniques were also implemented in this work). The project was partially supported by the EC.
- Project "SAPFO" (Multimedia in Education and Culture), which was partially supported by STRIDE - HELLAS. (Head of Ideatech team in the project)

Teaching Experience

a. As a member of the teaching assistance of NTUA.

Four years teaching of undergraduate lessons in NTUA, more specifically:

- Programming Electronic Computers. (4 winter semesters 1984 - 1988, programming language FORTRAN).
- Introduction to Electronic Computers (spring semester 1985)
- Digital Image Processing (spring semesters 1986, 1987).
- Supervision of laboratory exercises in Telecommunication Systems (2 semesters).
- Participation in the supervision of five diploma thesis of undergraduate students in NTUA.

b. Post Doctorate teaching experience.

Teaching as a visiting professor in the Air Defence Academy, more specifically:

- Programming Languages (Four semesters)
- Signal Theory (Five semesters).

Teaching as an assistant professor at the University of Thessaly, more specifically:

- Informatics in Education (One semester)

Teaching as a faculty member of Democritus University of Thrace, more specifically:

Undergraduate lessons

- Automatic Control Systems
- Automatic Control Systems II (Modern Control)
- Automatic Control Systems III (Optimal and Stochastic Control)
- Robotics (Analysis Programming and Control)
- Computational Intelligence
- Microprocessors and Applications

Postgraduate lessons

- Neural Networks with applications in Automatic Control Systems
- Intelligent Control Techniques with applications
- Principles of Systems Theory
- Artificial Intelligence

c. International teaching experience and invited lectures

Postgraduate lessons

- Introduction to Artificial Neural Networks with applications in Control - **Friedrich-Alexander-Universität, Erlangen-Nürnberg, Deutschland**, Lehrstuhl für Regelungstechnik, Teaching period 12-22/1/2010.
- Introduction to Adaptive Estimation and Control - **Friedrich-Alexander-Universität, Erlangen-Nürnberg, Deutschland**, Lehrstuhl für Regelungstechnik, Teaching period 18-28/1/2011.

Invited lectures abroad

- Automatic Control Systems Lab of DUTH, Description and Research Topics - in **Friedrich-Alexander-Universität, Erlangen-Nürnberg, Deutschland**, Lehrstuhl für Regelungstechnik, Inviting Professors G Roppenecker, T. Moor, date: Oct. 2007.
- A New Neuro-Fuzzy Approach for Nonlinear System Identification and Control - in **Technische Universität Berlin**, Fachgebiet Regelungssysteme, inviting Professor Joerg Raisch, date: 3-11-2008.
- New Trends in Neuro-Fuzzy system identification and control - **Plenary Speech** in the 6th International Symposium on Process Control (SPC 2009), Ploiesti, Romania, 5-8 May 2009.
- New Developments on Fuzzy Cognitive Maps with Pattern Recognition Applications - in **City University London, UK**, School of Engineering and Mathematical Sciences – Information Engineering and Medical Imaging Group, Inviting Professor Panos Liatsis, date: 3-11-2009.
- Neuro-Fuzzy System Identification and Control of Nonlinear Systems - in **Loughborough University, UK**, Department of Electronic and Electrical Engineering – Control Systems Group, Inviter Senior Lecturer Argyrios Zolotas, date: 2-11-2009.
- Neuro-Fuzzy System Representation and Indirect Adaptive Control of Nonlinear Systems - in **Technische Universität München**, Lehrstuhl für Regelungstechnik, Inviting Professor Boris Lohmann, date 27-1-2010.

Supervision of Undergraduate students' Thesis

Supervision (up to now) of over than 60 students in preparing their diploma thesis

Supervision of Postgraduate students

Supervision of Master Thesis

1. Kottas, Theodore (graduated, 2005)
2. Choisis, Stelios (graduated, 2006)
3. Samartzidis, Sofoklis (graduated 2009)
4. Malkotsis, Spyros (graduated 2009)

5. Tabakis, George (graduated 2009)
6. Bikas, Labros (graduated 2015)
7. Maltoudogloy, Lysimachos (graduated 2016)
8. Karapetsa, Agapi (graduated 2016)
9. Karatzinis, Georgios (in Progress)
10. Bikos, Dimitrios (in Progress)

Supervision of PhD Thesis

1. Mitzias, Dimitris (graduated, 2007) - cosupervision
2. Papakostas, George (graduated, 2007)
3. Spiliotis, Iraklis (graduated, 2007) - cosupervision
4. Tsirikolias, Kostas (graduated, 2007) - cosupervision
5. Theodoridis, Dimitris (graduated, 2010)
6. Hatzichristofis, Savvas (graduated, 2010)
7. Iakovidou, Chrysanthi (graduated, 2015)
8. Kottas, Theodore (under completion)
9. Sofianos, Nikos (under completion)
10. Plakias, Spyros (in progress)

Research Activities

Areas of interest

- Computational Intelligence in Control Applications
- Computational Intelligence in Robotics, in Renewable Power Generation, in Electrical Machines and in Smart Grids.
- Parallel processing, Neural Networks.
- Fuzzy systems in Pattern Recognition and Control.
- Signal Processing Algorithms with applications to image and speech processing.
- Pattern Recognition
- Image Modelling, Segmentation, Restoration, and Enhancement.
- Image Analysis and understanding - Computer Vision

Participation in European RTD Programs

- ESPRIT - SPIN (Through National Technical University of Athens). My involvement: Study of the prosody of Greek Language. Periods 1/8/1987 – 30/9/1988, 1/5/1989 – 30/10/1989, 1/2/1990 – 30/6/1990.
- EUROTRA (Through ILSP – Machine Translation between languages of European Countries). Personal involvement 1/1/1992 – 31/12/1992.
- TRANSLEARN (Through ILSP - Machine Translation between languages of European Countries). Personal involvement 1/1/1993 – 31/12/1993.
- STRIDE HELLAS (Through IDEATECH S.A and LAMPRAKIS RESEARCH FOUNDATION– Multimedia in Education and Culture). Personal involvement 1991 – 1993.
- FACIT -(Fast Automatic Conversion with Integrated Tools).Libraries project: 1044. (Through IDEATECH S.A and National Library of Greece 1993-1995). My involvement in "Specifications and Development of a special OCR Software for Automatic Conversion of the available bibliographic cards into Electronic Form
- TMR (Through DUTH – Development of MRI processing tools). Programme No ERB FMRX CT 970160, Title: “ Advanced Signal Processing for Medical Magnetic Resonance Imaging and Spectroscopy”, (1998 – 2001).

- INTEREG IIIA/PHACE CBC Greece-Bulgaria. Title:"New Technologies in Hydrology, in Irrigation Engineering and in Environmental Protection" My involvement in "Automations and Informatics in Irrigation Engineering ", (2005 – 2008)
- NOPTILUS - Autonomous, Self-learning, Optimal and Complete Underwater Systems (www.noptilus-fp7.eu). FP7-ICT-2009.2.1: Cognitive Systems and Robotics, C. New ways of designing and implementing complete robotic systems, (2011 – 2014), My involvement in "Development of Methodologies for Autonomous Navigation of Underwater Robots .
- AGILE - Rapidly-deployable, Self-tuning, Self-reconfigurable, Nearly-optimal Control Design for Large-Scale Nonlinear Systems (www.agile-fp7.eu). FP7-ICT-5-3.5 – Engineering of Networked Monitoring and Control Systems, (2010 – 2012). My involvement in "Development of Control Methods for Large Scale Systems".

Also, participation in 20 national (or partially supported by the EU) RTD projects, in 7 of them being the scientific coordinator or head of the research team.

International Cooperation

1. “Dunarea de Jos” University of Galati, Department of Electrical Eng , ROMANIA (Professors: S. Caraman, L. Frangu)
2. Petroleum - Gas University of Ploiesti, Dept. of Automatic Control & Computers , ROMANIA (Professors: N. Paraskiv, A. Moise)
3. University of Kragujevac, Faculty of Mechanical Engineering, SERBIA. (Professor: G. Devedzic)
4. Bulgarian Academy of Sciences, Institute of Control and System Research, Sofia, BULGARIA. (Professor: Petia Koprinkova)
5. University of Erlangen-Nuremberg, Germany. Department of Electrical, Electronic and Communication Engineering, Chair of Automatic Control. (Professors: T. Moor, G. Roppenecker)
6. University of Erlangen-Nuremberg, Germany. Computer Science Department , Chair of Pattern Recognition (Inf. 5) (Dr. Elli Angelopoulou)

Books – Chapters in Books

Books

- S. Chatzichristofis and Y. Boutalis, *Compact Composite Descriptors for Content Based Image Retrieval - Basics, Concepts, Tools*, VDM Verlag, Deutschland, 2011, ISBN: 978-3-639-37391-2.
- Y. Boutalis, D. Theodoridis, T. Kottas and M. Christodoulou, *System Identification and Adaptive Control - Theory and Applications of the Neurofuzzy and Fuzzy Cognitive Network Models*, Springer, 2014, ISBN: 978-3-319-06368-8
- Y. Boutalis, *Robotics (Analysis and Control – in Greek)*, Democritus University press, Greece, 2003.
- Y. Boutalis and G. Syrakoulis, *Computational Intelligence and Applications (in Greek)*, Greece, 2010. ISBN: 978-960-93-2008-5
- Y. Boutalis, *Robotics (Analysis Programming and Control of Robotic Manipulators – in Greek)*, Greece, 2015. ISBN: 978-960-93-7111-7

Chapters

1. Y. S. **Boutalis** and O. I. Kosmidou, Control of a fed-batch bioprocess by using neural network observers, chapter 25 in *Computational Intelligence in Systems and Control – Design and Applications*, edited by s. G. Tzafestas, pp. 267-276, Kluwer Academic Publishers, Netherlands 2000.
2. O. Kosmidou, Y. **Boutalis** and Ch. Hatzis, An LMI optimization approach for guaranteed cost control of systems with state and input delays, chapter in: *Informatics in Control, Automation and Robotics I*, edited by Jose Braz et al, Springer, Netherlands, 2006.
3. G. Papakostas, D.A. Karras, Y. **Boutalis** and B.G. Mertzios, Efficient Computation of Moment Descriptors, chapter in: *Recent Advances in Applied Signals, Systems and Image Processing (Series: Signals and Communication Technology)*, edited by Karras Dimitrios, ISBN: 978-1-4020-8169-9, Springer, 2008.
4. Y. S. **Boutalis**, T. L. Kottas and M. A. Christodoulou, The FCN Framework: Development and Applications, chapter in: *Advances in Data Analysis*, C. Skiadas, Editor, Birkhauser, to appear 2009.
5. T.L. Kottas, Y. S. **Boutalis** and M. A. Christodoulou, Adaptive Estimation of Fuzzy Cognitive Networks and Applications, Chapter 13 in: *Applications of Intelligent Control to Engineering Systems*, K. Valavanis, Editor, pp. 329-363, ISBN: 978-90-481-3017-1, Springer 2009.
6. Y.S. **Boutalis** , M.A. Christodoulou, D.C. Theodoridis, Identification of Nonlinear Systems Using a New Neuro-Fuzzy Dynamical System Definition Based on High Order Neural Network Function Approximators, chapter in: *Artificial Higher Order Neural Networks for Computer Science and Engineering: Trends for Emerging Applications*, Ming Zhang, Editor, IGI Global, Hershey, Pennsylvania, 2010.
7. D.C. Theodoridis, M.A. Christodoulou, Y.S. **Boutalis**, Neuro – Fuzzy Control Schemes Based on High Order Neural Network Function Aproximators, chapter in: *Artificial Higher Order Neural Networks for Computer Science and Engineering: Trends for Emerging Applications*, Ming Zhang, Editor, IGI Global, Hershey, Pennsylvania, 2010.
8. D.C. Theodoridis, Y.S. **Boutalis**, M.A. Christodoulou, Nonlinear systems in Brunovsky canonical form: A novel neuro-fuzzy algorithm for direct adaptive regulation with robustness analysis, chapter in: *Chaotic Systems: Theory and Applications*, C. H. Skiadas and I. Dimotikalis (Editors), World Scientific, to appear 2010.
9. T. L. Kottas, Y.S. **Boutalis** and M.A. Christodoulou, Fuzzy Cognitive Networks: Adaptive Network Estimation and Control Paradigms, chapter in: *Fuzzy Cognitive Maps*, M. Glykas (Editor), Springer, ISBN 978-3-642-03219-6, pp. 89-134, 2010.
10. T. L. Kottas, A. D. Karlis and Y.S. **Boutalis**, Fuzzy Cognitive Networks for Maximum Power Point Tracking in Photovoltaic Arrays, chapter in: *Fuzzy Cognitive Maps*, M. Glykas (Editor), Springer, ISBN 978-3-642-03219-6, pp. 231-257, 2010.
11. S. A. Chatzichristofis, Y. S. **Boutalis** and M. Lux, “Combining color and spatial color distribution information in a fuzzy rule based compact composite descriptor.”, «*Communications in Computer and Information Science*, Springer-Verlag, CCIS 129», J. Filipe, A. Fred, and B. Sharp (Eds.), pp. 49-60, 2011.
12. D.C. Theodoridis, Y.S. **Boutalis**, M.A. Christodoulou, High order neuro-fuzzy dynamic regulation of general nonlinear multi variable systems, chapter 7 in: *Artificial Higher Order Neural Networks for Modeling and Simulation*, Ming Zhang, Editor, IGI Global, Hershey, Pennsylvania, pp. 134-161, 2013.
13. N. A. Sofianos and Y. S. **Boutalis**, Advances in Multiple Models based Adaptive Switching Control: from Conventional to Intelligent Approaches, chapter 3 in: *Innovations in Intelligent Machines-5: Computational Intelligence in Control Systems Engineering*, V. Balas, P.

Koprinkova and L. Jain, Editors, Springer-Verlag, Germany, ISBN: 978-3-662-43369-0, pp. 73-108, 2014.

14. *N. A. Sofianos and Y. S. Boutalis, A New Architecture for an Adaptive Switching Controller Based on Hybrid T-S Models, chapter in: Recent Contributions in Intelligent Systems, Volume 657 of the series Studies in Computational Intelligence, V. Sgurev, R. Yager, J. Kacprzyk and K. Atanasov, Editors, Springer International Publishing, Switzerland, ISBN: 978-3-319-41437-9, pp 143-161, 2016.*

Professional Societies

Member of the IEEE.

Member of the Technical Chamber of Greece.

Reviewer

A. In peer reviewed Journals

1. Signal Processing
2. Pattern Recognition
3. IEEE Trans. on Fuzzy Systems
4. IEEE Trans. On Neural Networks
5. IEEE Trans. On Industrial Electronics
6. IEEE Trans. on Systems, Man and Cybernetics (Part A & B)
7. IEEE Trans. on Intelligent Transportation Systems
8. IEEE Trans. on Pattern Analysis and Machine Intelligence (PAMI)
9. IEEE Trans. on Industrial Electronics
10. IET Renewable Power Generation
11. IET Control Theory and Applications
12. International Journal of Neural Systems
13. Journal of Zhejiang University SCIENCE (Springer)
14. Neural Parallel and Scientific Computations – Dynamic Publishers
15. Computer Science and Information Systems
16. Image and Vision Computing
17. European Journal of Control
18. INS Information Sciences
19. International Journal of Robust and Adaptive Control
20. Journal on Computing and Cultural Heritage
21. Journal of Intelligent and Fuzzy Systems
22. International Journal of Sustainable Energy
23. Mathematical Problems in Engineering
24. Journal of Romanian Biotechnological Letters
25. Applied Soft Computing
26. Energies
27. Neurocomputing (Elsevier)
28. Image and Vision Computing (Elsevier)
29. Circuits Systems and Signal Processing
30. Autosoft (Soft Computing and Automation) Journal
31. International Journal of Robotics and Automation

32. Signal Image and Video Processing (Springer)
33. Fuzzy Sets and Systems (Elsevier)

B. In Conferences and Symposia

1. 3rd International Workshop in Signal/Image Processing, 4 – 7 November 1996, Manchester, UK.
2. First International Workshop on Advanced Signal Processing for Medical MRI-MRS, March 13-15, 1997, DUTH –Xanthi, Hellas
3. The 6th IEEE International Conference on Electronics, Circuits and Systems – ICECS'99, September 5-8, 1999, Pafos, Cyprus.
4. The 4th Symposium on Process Control SPC-2003, Ploiesti – Romania, 8-9 October 2003
5. The 12th IEEE Mediterranean Conference on Control and Automation (MED'04), Kusadasi, Turkey, June 6-9, 2004.
6. The 17th Mediterranean Conference on Control and Automation, THESSALONIKI, GREECE, June 24-26, 2009
7. The 2nd IFAC International Conference on Intelligent Control Systems and Signal Processing – ICONS 2009, Istanbul, Turkey, September 21-23, 2009.
8. The 6th International Conference “Management of Technological Changes” - MTC 2009, September 3 - 5, 2009, Alexandroupolis, Greece.
9. The 18th Mediterranean Conference on Control and Automation, Marrakech, Morocco, June 23-25, 2010
10. The 19th Mediterranean Conference on Control and Automation, Aquis Corfu Holiday Palace, Corfu, Greece, June 20-23, 2011
11. The 2011 IEEE Multi-conference on Systems and Control, Denver, CO, USA, September 28-30, 2011
12. The 2011 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2011), Taipei, Taiwan, June 27-30, 2011
13. The 7th International Conference “Management of Technological Changes” - MTC 2011, September 1 - 3, 2011, Alexandroupolis, Greece.
14. The 20th Mediterranean Conference on Control and Automation MED'12, Barcelona, July 3-6, 2012
15. IEEE Symposium Series on Computational Intelligence 2013 (SSCI 2013), Singapore, April 15-19, 2013.

C. Member of Organizing and Scientific Conference Committees- Session Chairs

1. International Program Coordination Chair, at the 3rd International Workshop in Signal/Image Processing, 4 – 7 November 1996, Manchester, UK.
2. Local Organizing Committee, at the First International Workshop on Advanced Signal Processing for Medical MRI-MRS, March 13-15, 1997, DUTH –Xanthi, Hellas.
3. Session Chair, at the 5th International Workshop on Systems Signal and Image Processing (IWSSIP'98), Zagreb, Croatia, June 3-5, 1998. Συνεδρία: General Techniques and Algorithms.

4. Member of Scientific Committee, at the 4th Symposium on Process Control SPC-2003, Ploiesti – Romania, 8-9 October 2003
5. International Program Committee, at the 12th International Symposium on Modeling, Simulation and System's Identification-SIMSIS 12, GALATI, ROMANIA, September 24-25, 2004.
6. Session Chair, at the International Conference of Computational Methods in Science and Engineering 2004 (IWCCMSE 2004), Kavouri, Attica, Greece, November 19-23, 2004. Session: Computational Methods in Engineering II.
7. International Program Committee, at the 5th International Symposium on Process Control, PLOIESTI, ROMANIA, May 17-19, 2006
8. Member of the scientific Board, at the 5th International Conference “Management of Technological Changes” - MTC 2007, August 25th - 26th, 2007 Alexandroupolis, Greece
9. International Program Committee, at Chaotic Modeling and Simulation International Conference, CHANIA, GREECE, June 3-6, 2008
10. International Program Committee, at 6th International Symposium on Process Control (SPC 2009), PLOIESTI, ROMANIA, May 5-8, 2009
11. International Program Committee, at 2nd Chaotic Modeling and Simulation International Conference, CHANIA, GREECE, June 1-5, 2009
12. International Program Committee, Invited Session Organizer and Associate Editor at the 17th Mediterranean Conference on Control and Automation, THESSALONIKI, GREECE, June 24-26, 2009.
13. Member of the scientific Committee, at the 6th International Conference “Management of Technological Changes” - MTC 2009, September 3 - 5, 2009, Alexandroupolis, Greece.
14. International Program Committee, at the 14th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES2010), 8-10 September, 2010, Cardiff University, Cardiff, Wales, United Kingdom.
15. International Program Committee, and Associate Editor at the 18th Mediterranean Conference on Control and Automation, Marrakech, Morocco, June 23-25, 2010.
16. Member of the scientific Committee, at the 7th International Conference “Management of Technological Changes” - MTC 2011, September 1 - 3, 2011, Alexandroupolis, Greece
17. International Program Committee, at the 4th Chaotic Modeling and Simulation International Conference, Ag. Nikolaos - CRETE, GREECE, May31-June 3, 2011
18. Session Chair, at the 19th Mediterranean Conference on Control and Automation, MED’11, Corfu Island, June 20-23 2011, Greece. Session: Neural Networks.
19. Special session Organizer, at the 6th International Conference on Information, Intelligence, Systems and Applications (ISA 2015), Session Hybrid Systems in Portfolio Selection. Corfu Island, July 06-08, 2015, Greece

D. Member of Editorial Boards of Scientific Journals

1. Member of the international editorial board - Journal of Zhejiang University-SCIENCE C: Computers and Electronics, 2009 - now.
2. Guest Editor in International Journal of Adaptive Control and Signal Processing, Special issue on “New Results on Neuro-Fuzzy Adaptive Control Systems”

R&D Projects & Proposals

Reviewer of the General Secretariat of Research & Technology (Ministry of Industry & Development) in a number of National Projects and Proposals, partially funded by the EU.

Publications

a. Dissertations

- [D.1] **Y. S. Boutalis**, " *Fast Space Recursive Techniques with applications in Digital Image Processing*», PhD Dissertation, Computer Science Division, Department of El. Eng., NTUA, Athens, December 1988.
- [D.2] **Y. S. Boutalis**, "*Parallel Processing of 2-D digital signals based on the state - space model*", Diploma Thesis, Department of El. Eng., Polytechnic school of Xanthi, Thrace, Greek, November 1983.

b. Journals

- [J.1] Y. Boutalis, S. Kollias and G. Carayannis, "A Fast Multichannel Approach to Adaptive Image Estimation", IEEE Trans. on ASSP, vol. 37, no. 7, pp. 1090-1098, July 1989.
- [J.2] Y. Boutalis, S. Kollias and G. Carayannis, "A Fast Adaptive Approach to the Restoration of Images Degraded by Noise", Signal Processing, pp 151 -162, February 1990.
- [J.3] L. Sukissian, S. Kollias and Y. Boutalis, "Adaptive Classification of Textured Images Using Linear Prediction and Neural Networks", Signal Processing, pp 209 - 232, vol. 36, 1994.
- [J.4] M. A. Kattis, E. Providas, Y. Boutalis and A. Kalamkarov, "Antiplane deformation of a partially bonded elliptical inclusion", Theoretical and Applied fracture mechanics, pp. 43 –51, vol 27, 1997.
- [J.5] I. Kokolakis, S. Koukopolos, I. Andreadis and Y. Boutalis, "Cellular Automata based Noise Generator", The Journal of the Franklin Institute, vol. 336, No. 5, pp. 799-808, 1999.
- [J.6] Y. Boutalis, C. Papaodyseus and E. Koukoutsis, "A New Multichannel Recursive Least Squares Algorithm for Very Robust and Efficient Adaptive Filtering", Journal of Algorithms, vol.37, pp. 283-308, 2000.
- [J.7] Y. Boutalis, I. Andreadis and G. Tambakis, " A Fast fuzzy K-nearest neighbour algorithm for pattern classification ", Intelligent Data analysis, vol. 4, Numbers 3,4, pp.275-288, 2000.
- [J.8] Y. Boutalis, D. Karras and B. Mertzios, 'Regularized Supervised and Unsupervised Neural Network Models for Function Approximation in Intelligent Robot Dynamic Control", Buletin of University of Petrol & Gas University of Ploiest – Romania, pp. 99-104, vol. LII, May 2000.
- [J.9] Y. Boutalis, K. Tsirikolias, B. Mertzios and I. Andreadis, "Implementation of Morphological Filters using Coordinate Logic Operations", Pattern Recognition, vol. 35, pp. 187-198, Jan. 2002.
- [J.10] Y. S. Boutalis and O. I. Kosmidou, "Using Neural Network Observers for Bioprocess Control", Control Engineering and Applied Informatics, CEAI vol. 3, Number 1, pp. 51-58, April 2001.
- [J.11] I. Andreadis, C. Fyrinides, A. Gasteratos and Y. Boutalis, "Decomposition of Grey-Scale Morphological Structuring Elements in Hardware", Image Processing & Communications, vol. 8, Number 2, pp. 13-22, 2002.
- [J.12] A. Moise, Y.S. Boutalis and B.G. Mertzios "Cartesian Space Neural Network Control of Robot Manipulators", Systems Science Journal - Special Issue on Advances in Robotics, Virtual Reality, Robot Manipulators, Bipedes, and Mobile Robots: Guest Editors: S. G..Tzafestas and C. S. Tzafestas, vol 27, No 4, pp 35-45, 2002
- [J.13] Y. S. Boutalis and O. I. Kosmidou, "A Feedback Linearization Technique by Using Neural Networks: Application to Bioprocess Control" Journal of Computational Methods in Sciences and Engineering, vol. 6, pp. 269–282, 2006.
- [J.14] Y. S. Boutalis, "Neural Network Approaches for Feedback Linearization", Control Engineering and Applied Informatics, volume 6, no.1, pp. 15-26, 2004.
- [J.15] G. Papakostas, D. Karras, B. Mertzios and Y. Boutalis, "An Efficient Feature Extraction Methodology for Computer Vision Applications using Wavelet Compressed Zernike Moments", IGGST International

- Journal on Graphics, Vision and Image Processing, Special Issue: Wavelets and Their Applications, Vol. S11, pp. 5-15, 2005
- [J.16] O. Kosmidou and Y. S. Boutalis, "A Linear Matrix Inequality Approach for Guaranteed Cost Control of Systems with State and Input Delays", *IEEE Transactions on Systems, Man and Cybernetics Part A*, vol. 36, no. 5, pp. 936-942, 2006.
- [J.17] O. Kosmidou and Y. S. Boutalis, "On the Riccati equations arising in robust control approaches", *Applied Numerical Analysis & Computational Mathematics*, Wiley, vol.2, no.1, pp. 69-99, 2005.
- [J.18] T. L. Kottas, Y. S. Boutalis, and A. D. Karlis, "A New Maximum Power Point Tracker for PV Arrays Using Fuzzy Controller in Close Cooperation with Fuzzy Cognitive Networks", *IEEE Transactions on Energy Conversion*, vol. 21, no. 3, pp. 793-903, September 2006.
- [J.19] G. A. Papakostas, Y. S. Boutalis, C. N. Papaodysseus and D. K. Fragoulis, "Numerical error analysis in Zernike moments computation", *Image and Vision Computing (Elsevier)*, vol 24, pp. 960-969, 2006.
- [J.20] T. L. Kottas, Y. S. Boutalis and M. A. Christodoulou, "Fuzzy Cognitive Networks: A general framework", *Intelligent Decision Technologies*, vol. 1, pp. 183-196, 2007.
- [J.21] A. D. Karlis, T. L. Kottas and Y. S. Boutalis, "A novel maximum power point tracking method for PV systems using Fuzzy Cognitive Networks (FCN)", *Electric Power Systems Research*, vol. 77, pp. 315-327, 2007.
- [J.22] G. A. Papakostas, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "A New Class of Zernike Moments for Computer Vision Applications", *Information Sciences*, vol. 177, no.13, pp. 2802-2819, 2007.
- [J.23] G. A. Papakostas, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "Fast Numerically Stable Computation of Orthogonal Fourier-Mellin Moments", *IET Computer Vision*, vol.1, no. 1, pp. 11-16, 2007.
- [J.24] G. A. Papakostas, Y. S. Boutalis, S. Samartzidis, D. A. Karras and B. G. Mertzios, "Two-Stage Hybrid Tuning Algorithm for Training Neural Networks in Image Vision Applications", *International Journal of Signal and Imaging Systems Engineering*, vol. 1, no. 1, pp. 58-67, 2008.
- [J.25] G. A. Papakostas, Y. S. Boutalis, C.N. Papaodysseus and D.K. Fragoulis, "Numerical Stability of Fast Computation Algorithms of Zernike Moments", *Applied Mathematics and Computation*, vol. 195, no. 1, pp. 326-345, 2008.
- [J.26] G. A. Papakostas, Y. S. Boutalis, D. E. Koulouriotis and B. G. Mertzios, "Fuzzy Cognitive Maps for Pattern Recognition Applications", *International Journal of Pattern Recognition and Artificial Intelligence*, vol. 22, no. 8, pp. 1461-1486, 2008.
- [J.27] G. A. Papakostas, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "Pattern Classification by Using Improved Wavelet Compressed Zernike Moments", *Applied Mathematics and Computation*, vol. 212, pp. 162-176, 2009.
- [J.28] G. A. Papakostas, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "Modified Factorial Free Direct Methods for Zernike and Pseudo-Zernike Moments Computation", *IEEE Trans. on Instrumentation and Measurement (Special Issue of IST'06)*, vol. 58, no. 7, pp. 2121-2131, 2009.
- [J.29] S. A. Chatzichristofis, K. Zagoris, Y. S. Boutalis and N. Papamarkos, "Accurate Image Retrieval Based on Compact Composite Descriptors and Relevance Feedback Information", *International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI)*, vol. 24, no. 2, pp. 207-244, 2010.
- [J.30] Y. Boutalis, T. Kottas and M. Christodoulou, "Adaptive Estimation of Fuzzy Cognitive Maps with proven Stability and Parameter Convergence", *IEEE Transactions on Fuzzy Systems*, vol. 17, no. 4, pp. 874 - 889, Aug. 2009.
- [J.31] Y. Boutalis, D. Theodoridis and M. Christodoulou, "A new Neuro FDS definition for indirect adaptive control of unknown nonlinear systems using a method of parameter hopping", *IEEE Transactions on Neural Networks*, 20(4):609-625, 2009.
- [J.32] D. Theodoridis, Y. Boutalis and M. Christodoulou, "Direct Adaptive Control of Unknown Nonlinear Systems Using a New Neuro-Fuzzy Method Together with a Novel Approach of Parameter Hopping", *Kybernetika*, 45(3):349-386, 2009.
- [J.33] S. A. Chatzichristofis and Y. S. Boutalis, "Content Based Radiology Image Retrieval Using a Fuzzy Rule Based Scalable Composite Descriptor", *Multimedia Tools and Applications, Special Issue on Data Semantics for Multimedia Systems*, vol. 46, no. 2, pp 493-519, 2010.
- [J.34] I. M. Spiliotis and Y. S. Boutalis, "Parameterized real-time moment computation on gray images using block techniques", *Journal of Real-Time Image Processing*, Springer, Published on-line, 2009, DOI: 10.1007/s11554-009-0142-0.
- [J.35] G. A. Papakostas, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "Efficient Computation of Zernike and Pseudo-Zernike Moments for Pattern Classification Applications", *Pattern Recognition and Image Analysis*, vol. 20, no. 1, pp. 56-64, 2010.

- [J.36] Y. S. Boutalis, "A new method for constructing kernel vectors in morphological associative memories of binary patterns", *Computer Science and Information Systems – ComSIS*, vol. 08, no. 1, pp. 141-166, 2011. (DOI:10.2298/CSIS091114026B).
- [J.37] D. Theodoridis, Y. Boutalis and M. Christodoulou, "Indirect adaptive control of unknown multi variable nonlinear systems with parametric and dynamic uncertainties using a new neuro-fuzzy system description", *International Journal of Neural Systems (IJNS)*, Vol. 20, no. 2, pp. 129-148, 2010. (DOI: 10.1142/S0129065710002310). (IF: 2.99)
- [J.38] D. Theodoridis, Y. Boutalis and M. Christodoulou, "A New Neuro-Fuzzy Approach with Robustness Analysis for Direct Adaptive Regularization of Systems in Burnkovsky Form", *International Journal of Neural Systems (IJNS)*, Vol. 20, no. 4, pp. 319-339, 2010. (DOI: 10.1142/S0129065710002449) (IF: 2.99)
- [J.39] T. Kottas, Y. Boutalis, M. Christodoulou, "Bi-linear Adaptive Estimation of FCNs with proven Stability and Parameter Convergence", *IEEE Transactions on Fuzzy Systems*, submitted 2009, under final revision.
- [J.40] D. Theodoridis, Y. Boutalis and M. Christodoulou, "Direct Adaptive Regulation of Unknown Nonlinear Systems with Analysis of the Model Order Problem", *Journal of Zhejiang University-SCIENCE C (Computers & Electronics)*, In print, 2010.
- [J.41] S. Chatzichristofis, D. Mitzias, G. Sirakoulis and Y. S. Boutalis, "A Novel Cellular Automata Based Technique for Visual Multimedia Content Encryption", *Optics Communications*, Elsevier, vol. 283, no. 21, pp. 4250-4260, 2010.
- [J.42] D. Theodoridis, Y. Boutalis and M. Christodoulou, "Robustifying Analysis of the Direct Adaptive Control of Unknown Multivariable Nonlinear Systems Based on a New Neuro-Fuzzy Method", *Journal of Artificial Intelligence and Soft Computing*, Accepted, 2010.
- [J.43] D. Theodoridis, Y. Boutalis and M. Christodoulou, "A new adaptive neuro-fuzzy controller for trajectory tracking of robot manipulators", *International Journal of Robotics and Automation*, Accepted, 2010.
- [J.44] S. Chatzichristofis, A. Arampatzis and Y. Boutalis, "Investigating the Behavior of Compact Composite Descriptors in Early Fusion, Late Fusion, and Distributed Image Retrieval", *Radioengineering*, vol. 19, no. 4, pp. 725-733, 2010.
- [J.45] H.E. Psillakis, M.A. Christodoulou, T. Giotis and Y. Boutalis, "An observer approach for deterministic learning using patchy neural networks with applications to fuzzy cognitive networks", *Int. J. Artif. Life Research*, vol.2, no. 1, pp 1-16, 2011.
- [J.46] S. Chatzichristofis, A. Arampatzis and Y. Boutalis, "Fast Retrieval from Image Databases via Binary Haar Wavelet Transform on the Color and Edge Directivity Descriptor", *International Journal On Advances in Networks and Services*, vol. 4, n0. 1&2, pp. 223-231, 2011.
- [J.47] D. Theodoridis, Y. Boutalis and M. Christodoulou, "Dynamical Recurrent Neuro-Fuzzy Identification Schemes Employing Switching Parameter Hopping", *International Journal of Neural Systems*, vol. 22, no. 2, pages 16, 2012, DOI: 10.1142/S0129065712500049. (SCI-IF 4.284)
- [J.48] N. Sofianos and Y. Boutalis, "Stable Indirect Adaptive Switching Control for Fuzzy Dynamical Systems Based on T-S Multiple Models", *International Journal of Systems Science*, vol. 44, no. 8, pp. 1546-1565, 2013, Published online Feb. 2012. <http://dx.doi.org/10.1080/00207721.2012.659697>. (SCI-IF 0.991)
- [J.49] S. A. Chatzichristofis, C. Iakovidou, Y. S. Boutalis and Elli Angelopoulou, "Mean Normalized Retrieval Order (MNRO). A New Content-Based Image Retrieval Performance Measure", *Multimedia Tools and Applications*, Springer, in print, pages 32, published on line, 2012. (DOI 10.1007/s11042-012-1192-z). (SCI-IF 0.617)
- [J.50] D. Theodoridis, Y. Boutalis and M. Christodoulou, "Direct Adaptive Neuro-Fuzzy Trajectory Tracking of Uncertain Nonlinear Systems, *International Journal of Adaptive Control and Signal Processing*, Special Issue: New Results on Neuro-fuzzy Adaptive Control Systems, vol 26, No. 7, pp. 660-688, July 2012, DOI: 10.1002/acs.2302. (SCI-IF 0.913)
- [J.51] K. Schmidt and Y. Boutalis, "Fuzzy Discrete Event Systems for Multi-objective Control: Framework and Application to Mobile Robot Navigation", *IEEE Trans. on Fuzzy Systems*, vol. 20, no. 5, pp. 910-922, October 2012, DOI 10.1109/TFUZZ.2012.2189219. (SCI-IF 4.26)
- [J.52] T. Kottas, Y. Boutalis, M. Christodoulou, "Bi-linear Adaptive Estimation of Fuzzy Cognitive Networks", *Applied Soft Computing (Elsevier)*, vol. 12 pp. 3736-3756, 2012. DOI: 10.1016/j.asoc.2012.01.025. (SCI-IF 2.612)

- [J.53] G. Tsengenēs, Y. Boutalis and G. Adamidis, "A Novel Fuzzy PR Current Controller for Shunt Active Power Filter Applications", *International Review on Modelling and Simulations (IREMOS)*, vol. 5, no. 1, pp. 362-373, 2012
- [J.54] S. chatzichristofis, C. Iakovidou, Y. Boutalis and O. Marques, "Co.Vi.Wo.: Color Visual Words Based on Non-Predefined Size Codebooks ", *IEEE Trans on Cybernetics*, vol. 43, no. 1, pp. 192-205, 2013. doi: 10.1109/TSMCB.2012.2203300.
- [J.55] Y. Boutalis, M. Christodoulou and D. Theodoridis, "Indirect Adaptive Control of Nonlinear Systems based on Bilinear Neurofuzzy Approximation", *International Journal of Neural Systems (SCI-IF 4.284)*, vol. 23, no. 5, pages 17, Oct. 2013. DOI:10.1142/S0129065713500226.
- [J.56] N. Sofianos and Y. Boutalis, "Multiple Models Fuzzy Control: A Redistributed Fixed Models Based Approach", *Intelligent automation & Soft Computing, Special Issue on Advances in Intelligent Control: Theory and Applications*, Taylor & Francis and Autosoft Journal, vol. 20, no. 2, pp. 229-243, 2014.
- [J.57] S. Chatzichristofis, L. Bampis, O. Marges, M. Lux and Y. Boutalis, "Image Encryption using the Recursive Attributes of the Exclusive-OR Filter", *Journal of Cellular Automata*, vol. 9, no. 2-3, pp. 125-137, 2014 (Invited Contribution).
- [J.58] C. Iakovidou, N. Anagnostopoulos, A. Kapoutsis, Y. Boutalis, M. Lux and S. A. Chatzichristofis, "Localizing Global Descriptors for Content Based Image Retrieval. Simplifying the Simple Family of Descriptors", «*EURASIP Journal on Advances in Signal Processing*», Springer, Volume 2015, Issue 80, 7 September 2015, pp 1-20.
- [J.59] L. Bampis, C. Iakovidou, S. A. Chatzichristofis, Y. Boutalis and A. Amanatiadis, "Real-Time Indexing for Large Image Databases: Color and Edge Directivity Descriptor on GPU", «*The Journal of Supercomputing*», Springer, Volume 71, Issue 3, March 2015, pp 909-937
- [J.60] N. Sofianos and Y. Boutalis, "Robust adaptive multiple models based fuzzy control of nonlinear systems", *Neurocomputing*, Elsevier, Volume 173, pp. 1733-1742, 2016.
- [J.61] D. Stimoniaris, T. Kottas, D. Tsiamitros, Y. Boutalis and E. Dialynas, "A new operation scheme of a Small Grid using Fuzzy Cognitive Networks", *IEEE Transactions on Smart Grids*, (Under Review).

c. Conferences

- [C.1] Y. Boutalis, S. Kollias and G. Carayannis, "A Fast Multichannel Approach to Adaptive Estimation and Filtering of two-Dimensional Images", *Proceedings of ICASSP' 87*, pp. 1981-1984.
- [C.2] S. Kollias, Y. Boutalis and G. Carayannis, "A Fast Adaptive Algorithm for Image Restoration", *Proceedings of Int. Conf. on DSP, Florence, Italy*, pp. 466-470, September 1987.
- [C.3] Y. Boutalis, S. Kollias, G. Carayannis and L. Sukissian, "A Fast Technique for Automatic Segmentation and Classification of Textured Images", *Proceedings of ICASSP'88*, pp. 1132- 1135, April 1988.
- [C.4] S. Kollias, Y. Boutalis and G. Carayannis, "Fast Adaptive Identification and Restoration of Images Degraded by Blur and Noise", *Proceedings of IEEE ISCAS' 88, Helsinki, Finland*, June 1988.
- [C.5] S. Bakamidis and Y. Boutalis, "A New Fast Algorithm to Identify the Nearest Neighbour", *Proceedings of EUSIPCO-92, Brussels, Belgium*, pp. 539-542, August 24-27, 1992.
- [C.6] Y. Boutalis, C. Papaodyseus and E. Koukoutsis, "A New Multichannel Recursive Least Squares Algorithm for Very Robust and Efficient Adaptive Filtering", *5th International Workshop on Systems Signal and Image Processing (IWSSIP'98)*, pp 115 – 118, Zagreb, Croatia, June 3-5, 1998.
- [C.7] D. A. Karras, Y. S. Boutalis and B. G. Mertzios, "A Two-stage Methodology for Approximating Functions Based on Neural Networks with Applications to Intelligent Dynamic Robot Control", *5th International Workshop on Systems Signal and Image Processing (IWSSIP'98)*, pp 139 – 142, Zagreb, Croatia, June 3-5, 1998.
- [C.8] Y. Boutalis and O. Kosmidou, "Control of a Fed-Batch Bioprocess by using Neural Network Observers", *IFAC International Symposium on Soft Computing in Engineering Applications (SOFTCOM 98)*, Athens, Greece, June 22-25, 1998. Published in book of abstracts. It was selected and published (after revision) as chapter 25 in the book: *Computational Intelligence in Systems and Control – Design and Applications*, edited by s. G. Tzafestas, pp. 267-276, Kluwer Academic Publishers, Netherlands 2000.
- [C.9] D. A. Karras, Y. S. Boutalis D. Mitziās and B. G. Mertzios, "A Neural Function Approximation Methodology based on Multiple Feature Extraction Techniques for Solving the Inverse Modeling

- Problem in Intelligent Robotics Applications", Proceeding of the ASI'98 Conference, pp. 252 – 259, Bremen, Germany, June 14-17, 1998.
- [C.10] H. Konsoulas, Y. Boutalis and B. Mertzios, "Recursive Training Techniques in Artificial Neural Networks: Comparative study and Realization Issues", Proceedings of the 2nd Conference on Technology and Automation, pp. 200-207, Hellenic Conference Center (HELEXPO) of Thessaloniki, Greece, October 2-3, 1998.
- [C.11] O. I. Kosmidou and Y. S. Boutalis, "A comparison of guaranteed cost control methods of discrete-time linear uncertain systems", Proceedings of the 18th IASTED International Conference MODELING, IDENTIFICATION AND CONTROL, pp. 320-322, Innsbruck, Austria, February 15-18, 1999.
- [C.12] Y. Boutalis and O. Kosmidou, "Design of a Neural Network Observer to Control a Fed-Batch Bioprocess", European Control Conference – ECC'99, 31 August – 3 September 1999, Karlsruhe, Germany.
- [C.13] Y. S. Boutalis, K. Tsirikolias, B.G. Mertzios and I.T. Andreadis, "Using Simple Coordinate Logic Operators to Realize Basic Morphological Operations", Fifth International Conference on Signal Processing (ICSP 2000), Beijing - China , pp. 488-493, August 21 –25 2000.
- [C.14] Y. Boutalis, B. G. Mertzios and A. G. V. Moise, "Morphological Associators for Pattern Recognition", 8th International Workshop on Systems, Signals and Image Processing (IWSSIP-2001), Bucharest – Romania, pp. 121-124, June 7-9 2001.
- [C.15] A. Moise, Y. S. Boutalis and B. G. Mertzios, "Cartesian Space Neural Network Control of Robot Manipulators", European Workshop on Intelligent Forecasting, Diagnosis & Control (IFDICON-2001), Island of Santorini – Greece, June 25-27 2001.
- [C.16] G. Devedzic, Y. S. Boutalis and B. G. Mertzios, "NPN Logic Based Decision Analysis", European Workshop on Intelligent Forecasting, Diagnosis & Control (IFDICON-2001), Island of Santorini – Greece, June 25-27 2001.
- [C.17] I. Andreadis, C. Fyrinides, A. Gasteratos and Y. S. Boutalis, "Decomposition of Grey-Scale Morphological Structuring Elements in Hardware", European Workshop on Service & Humanoid Robots (SERVICEROB-2001), Published in Book of abstracts, Island of Santorini – Greece, June 25-27 2001.
- [C.18] I. Andreadis, Y. Boutalis and A. Giannakidis, "Fuzzy Membership Function Generation and Defuzzification Through Analog Circuitry", presented in 5th WSES/IEEE WORLD MULTICONFERENCE ON Circuits, Systems, Communications & Computers (CSCC 2001), Rethimnon – Greece, 8-15 July 2001. Published in the book: Advances in Scientific Computing, Computational Intelligence and Applications, Editors: N. Mastorakis, V. Mladenov, B. Suter, L. J. Wang, pp. 98-101, WSES press, 2001.
- [C.19] Y. S. Boutalis, A. Moise and B. G. Mertzios, "Neural Network Schemes in Cartesian Space Control of Robot Manipulators", Proceedings of the 11th International Symposium on Modeling, Simulation and System's Identification – SIMSIS 11, pp. 56 – 61, Galati – Romania, 12 – 13 October 2001.
- [C.20] Y. S. Boutalis and O. I. Kosmidou, "Neural Network Approaches in Bioprocess Control", Invited paper, Proceedings of the 11th International Symposium on Modeling, Simulation and System's Identification – SIMSIS 11, pp. 112 – 117, Galati – Romania, 12 – 13 October 2001
- [C.21] S. A. Bakalexis, Y. S. Boutalis, and B. G. Mertzios, "Edge detection and Image Segmentation based on Nonlinear Anisotropic Diffusion", Proceedings of 14th International Conference on Digital Signal Processing- DSP2002, Santorini – Hellas, July 1-3, 2002.
- [C.22] M. I. Vardavoulia, I. Andreadis and Y. Boutalis, "Basic Morphological Image Processing Operations: A Tutorial", Int. Conf. on Telecommunications, Electronics and Control, Paper No. 3-20, pp. 1-7, Santiago, Cuba, July 17-19, 2002.
- [C.23] Y. Boutalis, I. Andreadis and B. Mertzios, "Fast Implementation of Morphological Operations Using a New Algebra Definition", Int. Conf. on Telecommunications, Electronics and Control, Paper No. 3-19, pp. 1-5, Santiago, Cuba, July 17-19, 2002.
- [C.24] L. Fragou, E. Ceanga, S. Caraman and Y. Boutalis, "A pattern recognition approach to intelligent behaviour: Switching the Strategies", Proceedings of the International IEEE Symposium on Intelligent Systems – IS 2002, pp. 360 – 363, Varna, Bulgaria, September 10-12, 2002.
- [C.25] A. G. Yiannoulis, Y. S. Boutalis and B. G. Mertzios, "Fast Segmentation of Color Images using the Fuzzy K-means Algorithm and Different Sampling Approaches", Proceedings of the 9th International Workshop on Systems, Signals and Image Processing – IWSIP 2002, pp. 532-535, Manchester, U.K, 7-8 November 2002.
- [C.26] D. A. Karras, Y. S. Boutalis and B. G. Mertzios, "A Support Vector Machine Function Approximation Approach for Solving the Inverse Modeling Problem in Intelligent Robotics Applications",

- Proceedings of the 9th International Workshop on Systems, Signals and Image Processing – IWSIP 2002, pp. 447-452, Manchester, U.K, 7-8 November 2002.
- [C.27] C. Voutriaridis, Y. S. Boutalis and B. G. Mertzios, “Ridge Polynomial Networks in Pattern Recognition”, Proceedings of the 4th EURASIP Conference on Video, Image Processing and Multimedia Communication, EC-VIP-MC2003, pp. 519-524, Zagreb – Croatia, 2-5 July 2003.
- [C.28] G. A. Papakostas, Y. S. Boutalis and B. G. Mertzios, “Evolutionary selection of Zernike moment sets in Image Processing”, Proceedings of the 10th International Workshop on Systems, Signals and Image Processing -IWSSIP 2003, pp. 199-202, Prague – Czech Republic, 10-11 September 2003.
- [C.29] Y. S. Boutalis and O. I. Kosmidou, “A Feedback Linearization Technique by Using Neural Networks: Application to Bioprocess Control” Proceedings of the International Conference of Computational Methods in Sciences and Engineering – ICCMSE 2003, pp. 90-92, Kastoria – Greece, 12-16 September 2003.
- [C.30] C. Voutriaridis, Y. Boutalis, A. Moise and B. Mertzios, “Recurrent Neural Networks in Behavioral Tasks of Mobile Robots”, Proceedings of the 4th Symposium on Process Control SPC-2003, pp. 48-51, Ploiesti – Romania, 8-9 October 2003.
- [C.31] T. L. Kottas, Y. S. Boutalis, G. Devedzic and B. Mertzios, “A new method for reaching equilibrium points in Fuzzy Cognitive Maps”, 2nd IEEE International Conference on Intelligent Systems – IS 2004, pp. 53-60, Varna, Bulgaria, June 22-24, 2004.
- [C.32] D. Karras, C. Vlitakis, Y. Boutalis and B. Mertzios “Optimizing the structure of Hierarchical Mixture of Experts using genetic algorithms”, 2nd IEEE International Conference on Intelligent Systems – IS 2004, pp. 144-149, Varna, Bulgaria, June 22-24, 2004.
- [C.33] G.A. Papakostas, Y.S. Boutalis, D.A. Karras, and B.G. Mertzios, “On the Reconstruction Performance of Compressed Orthogonal Moments”, 1st International Conference on Informatics in Control, Automation and Robotics (ICINCO’04), pp. 468-474, Setubal – Portugal, 25-28 August 2004.
- [C.34] O. I. Kosmidou, Y.S. Boutalis and Ch. Chatzis, “An LMI optimization approach for guaranteed cost control of systems with state and input delays”, 1st International Conference on Informatics in Control, Automation and Robotics (ICINCO’04), pp. 230-236, Setubal – Portugal, 25-28 August 2004.
- [C.35] O. I. Kosmidou and Y.S. Boutalis “On the Ricatti equations arising in robust control approaches”, International Conference on Numerical Analysis and Applied Mathematics, Extended abstract, pp. 211-213, Chalkis – Greece, 10-14 September 2004.
- [C.36] M. Gheorghiu, Y.S. Boutalis and A. Moise “WEB Camera Application in Security Systems”, The 12th International Symposium on Modeling, Simulation and Systems' Identification (SIMSIS 12), pp.172-175, Dunarea de Jos University of Galati, Romania, September 24-25, 2004.
- [C.37] Y.S. Boutalis “New kernel definition for robust to noise morphological associative memories”, International Conference on Computational Methods in Sciences and Engineering, 2004 – ICCMSE 2004, pp. 79-82, Athens, Greece, November 19-23, 2004.
- [C.38] P. Voulgarellis, M. A. Christodoulou, and Y. S. Boutalis, “A MATLAB based simulation language for aircraft ground handling operations at hub airports (SLAGOM)”, Joint 2005 International Symposium on Intelligent Control AND 13th Mediterranean Conference on Control and Automation, Limassol, pp. 334-339, Cyprus, June 27-29, 2005.
- [C.39] G. Ioannidis, M. A. Christodoulou, and Y. S. Boutalis, “A SIMULINK based simulation language for aircraft ground handling operations at hub airports (SSLA)”, Joint 2005 International Symposium on Intelligent Control AND 13th Mediterranean Conference on Control and Automation, pp. 340-345, Limassol, Cyprus, June 27-29, 2005.
- [C.40] M. A. Christodoulou, G. A. Rovithakis, A. G. Malamos, T. Varvarigou and Y. S. Boutalis, “Adaptive Control of Multimedia Services in Short-Term Resource Reservation Networks for QoS (Quality of Services), using Recurrent High Order Neural Networks”, Workshop on Modelling and Control of Complex Systems, Ayia Napa, Cyprus, June 30 – July 1, 2005.
- [C.41] G. A. Papakostas, Y. S. Boutalis and B. G. Mertzios, “An exploration measure of the diversity variation in genetic algorithms”, 2nd International Conference on Informatics in Control, Automation and Robotics (ICINCO’05), pp. 260-265, Barchelona – Spain, 14-17 September 2005.
- [C.42] T. L. Kottas, Y. S. Boutalis and M. A. Christodoulou, “A new method for weight updating in fuzzy cognitive maps using system feedback”, 2nd International Conference on Informatics in Control, Automation and Robotics (ICINCO’05), pp. 202-209, Barchelona – Spain, 14-17 September 2005.
- [C.43] G. A. Papakostas, Y. S. Boutalis, S. Samartzidis, D. A. Karras and B. G. Mertzios, “Combining Backpropagation and Genetic Algorithms to Train Neural Networks”, 12th International Workshop on Systems, Signals and Image Processing (IWSSIP’05), pp. 171-177, Chalkida – Greece , 22-24 September 2005.

- [C.44] G. K. Grigoriadis, Y. S. Boutalis and B. G. Mertzios, "A Distributed Arithmetic Architecture for Fast Implementation of Vector or Matrix Products", 12th International Workshop on Systems, Signals and Image Processing (IWSSIP'05), pp. 165-169, Chalkida – Greece , 22-24 September 2005
- [C.45] M. A. Christodoulou, S. K. Kodaxakis and Y. S. Boutalis, "An automatic system for aircraft collision avoidance in free flight: The 3-D Case", 5th International Conference on Technology & Automation ICTA'05, pp. 268-275, Thessaloniki, Greece, 15-16 October 2005.
- [C.46] Y. S. Boutalis, T. L. Kottas, B. Mertzios and M. A. Christodoulou, "A Fuzzy Rule Based Approach for storing the Knowledge Acquired from Dynamical FCMs", 5th International Conference on Technology and Automation (ICTA05), pp. 119-124 ,Thessaloniki, Greece, 15-16 October, 2005.
- [C.47] Y. S. Boutalis and T. L. Kottas, "On the Adaptation Abilities of a Fuzzy Cognitive Network Based Control Approach", 5th International Symposium on Process Control, 5th International Symposium on Process Control, Ploiesti, Romania, 17-18 May, 2006.
- [C.48] G. A. Papakostas, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "Efficient Computation of Orthogonal Moments by Suppressing the Factorial Terms", IEEE International Workshop on Imaging Systems and Techniques (IST'06), pp. 23-27, Minory – Italy, 29 April 2006.
- [C.49] T. Kottas, Y. Boutalis, V. Diamantis, O. Kosmidou and A. Aivasidis "A Fuzzy Cognitive Network Based Control Scheme for an Anaerobic Digestion Process", 14th Mediterranean Conference on Control and Applications, Session TMS – Process Control 1, pages 7, Ancona, Italy, 28-30 June, 2006.
- [C.50] V. Diamantis, T. Kottas, Y. Boutalis, O. Kosmidou and A. Aivasidis "Modeling Anaerobic Digestion Process Using Dynamical Fuzzy Cognitive Maps (D-FCM)", Protection and Restoration of the Environment VIII, Session on Mathematical Modelling and System Analysis - pages 7, Chania – Crete, Greece, 3-7 July, 2006
- [C.51] Y. S. Boutalis and T. L. Kottas, "The Fuzzy Conitive Network Framework in System Control Applications", International Conference on Intelligent Systems and Computing: Theory and Applications, pp. 220-230, Ayia Napa – Cyprus, 6-7 July, 2006.
- [C.52] G. A. Papakostas, Y. S. Boutalis, D. E. Koulouriotis and B. G. Mertzios, "A First Study of Pattern Classification by Using Fuzzy Cognitive Maps", 13th International Workshop on Systems, Signals and Image Processing (IWSSIP'06), pp.369-374, Budapest – Hungary, 21-23 September 2006.
- [C.53] Y. S. Boutalis, A. D. Karlis and T. Kottas, "Fuzzy Cognitive Networks + Fuzzy Controller as a self adapting control system for Tracking Maximum Power Point of a PV-Array", IEEE Industrial Electronics, IECON 2006 - 32nd Annual Conference, Paris – France, 6-10 November 2006.
- [C.54] G. A. Papakostas, D. A. Karras, B. G. Mertzios and Y. S. Boutalis, "An Efficient Invariant Image Recognition Methodology Using Wavelet Compressed Zernike Moments Denoised Through Self Organizing Maps", IEEE International Workshop on Imaging Systems and Techniques (IST'07), pp. 1-6, Krakow – Poland, 4-5 May 2007.
- [C.55] G. A. Papakostas, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "Fast Computation of Orthogonal Fourier-Mellin Moments Using Modified Direct Method", 14th International Workshop on Systems, Signals and Image Processing (IWSSIP'07), pp. 161-164, Maribor – Slovenia, 27-30 June 2007.
- [C.56] G. A. Papakostas, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "Highly Compressed Zernike Moments by Smoothing", 14th International Workshop on Systems, Signals and Image Processing (IWSSIP'07), pp. 213-216, Maribor – Slovenia, 27-30 June 2007.
- [C.57] M.A. Christodoulou, D.C. Theodoridis and Y.S. Boutalis, "Building Optimal Fuzzy Dynamical Systems Description Based on Recurrent Neural Network Approximation", Proceedings of the Workshop on Networked Distributed Systems for Intelligent Sensing and Control, pp. 82-93, Kalamata, Greece, June 2007.
- [C.58] S. A. Chatzichristofis and Y. S. Boutalis, "A Hybrid Scheme for Fast and Accurate Image Retrieval Based on Color Descriptors", IASTED International Conference on Artificial Intelligence and Soft Computing (ASC 2007), Proceedings: ACTA PRESS pp.280-285, Palma De Mallorca, Spain, August 29 - 31, 2007.
- [C.59] S. A. Chatzichristofis and Y. S. Boutalis, "FCTH: Fuzzy Color and Texture Histogram- A Low Level Feature for Accurate Image Retrieval", 9th International Workshop on Image Analysis for Multimedia Interactive Services, Proceedings: IEEE Computer Society, pp. 191-196, Klagenfurt, Austria, May 7 - 9, 2008.
- [C.60] S. A. Chatzichristofis and Y. S. Boutalis, "CEDD: Color and Edge Directivity Descriptor - A Compact Descriptor for Image Indexing and Retrieval.", 6th International Conference in advanced research on Computer Vision Systems ICVS 2008, Proceedings: Lecture Notes in Computer Science (LNCS), Springer-Verlag, pp.312-322, Santorini, Greece, May 12 - 15, 2008.

- [C.61] I. M. Spiliotis and Y. S. Boutalis, “Fast and Real-Time Moment Computation Methods of Gray Images Using Image Block Representation”, Proceedings of the fifth IASTED International Conference on Signal Processing, Pattern Recognition and Applications, pp. 323-328, February 13-15, Innsbruck, Austria, 2008.
- [C.62] D. C. Theodoridis , Y. S. Boutalis and M. A. Christodoulou, “A New Indirect Adaptive Neuro – Fuzzy Control algorithm with proof of error convergence and stability”, CHAOS 2008, Chaotic Modeling and Simulation, International Conference, Chania Crete Greece, June 3 – 6, 2008.
- [C.63] Klaus Schmidt and Yiannis Boutalis, “Computation of Supremal Controllable Sublanguages and Infimal Controllable Superlanguages for Fuzzy Discrete Event Systems”, Proceedings of the 16th Mediterranean Conference on Control and Automation – MED08, pp. 400-405, Ajaccio, Corsica, France, June 25-27, 2008.
- [C.64] D. C. Theodoridis , Y. S. Boutalis and M. A. Christodoulou, “Indirect Adaptive Neuro – Fuzzy Control Based On High Order Neural Network Function Approximators”, Proceedings of the 16th Mediterranean Conference on Control and Automation – MED08, pp. 386-393, Ajaccio, Corsica, France, June 25-27, 2008.
- [C.65] Y. S. Boutalis, M. A. Christodoulou and D. C. Theodoridis, “A New Neuro-Fuzzy Intelligent Method for Indirect Adaptive Control of Nonlinear Systems via a Novel Approach of Parameter Hopping”, Proceedings of Joint International conferences (Soft Computing & Intelligent Systems and Symposium on Advanced Intelligent Systems) SCIS&ISIS 2008, pp. 918-923, Nagoya, Japan, September 17-21, 2008.
- [C.66] Y. Boutalis, T. Kottas and M. Christodoulou, “On the Existence and Uniqueness of Solutions for the Concept Values in Fuzzy Cognitive Maps”, Proceedings of 47th IEEE Conference on Decision and Control – CDC’08, pp. 98-104, Cancun, Mexico, Dec. 9-11, 2008.
- [C.67] S. A. Chatzichristofis, Y. S. Boutalis and Mathias Lux, “Selection of the Proper Compact Composite Descriptor for Improving Content Based Image Retrieval.”, The Sixth IASTED International Conference on Signal Processing, Pattern Recognition and Applications SPPRA 2009, Proceedings: ACTA PRESS pp.134-140, February 17 - 19, 2009, Innsbruck, Austria 2009.
- [C.68] S. A. Chatzichristofis and Y. S. Boutalis, “Content Based Medical Image Indexing and Retrieval Using a Fuzzy Compact Composite Descriptor”, The Sixth IASTED International Conference on Signal Processing, Pattern Recognition and Applications SPPRA 2009, Proceedings: ACTA PRESS pp.1-6, Innsbruck, Austria, February 17-19, 2009.
- [C.69] D. Theodoridis, M. Christodoulou and Y. Boutalis, “Direct Adaptive Control of Unknown Multi-variable Nonlinear Systems with Robustness Analysis using a new Neuro-Fuzzy Representation and a Novel Approach of Parameter Hopping”, Proceedings of the 17th Mediterranean Conference on Control & Automation, pp. 558-563, Thessaloniki, Greece, June 24 - 26, 2009.
- [C.70] M. Christodoulou, Y. Boutalis and T. Kottas, Adaptive Estimation of Fuzzy Cognitive Maps with Proven Stability and Parameter Convergence”, SIAM Conference on Control and its Applications, July 6-8, Denver Colorado, 2009. (in Book of abstracts)
- [C.71] M. Christodoulou, Y. Boutalis and D. Theodoridis, Indirect Adaptive Control of Unknown MIMO Nonlinear Systems Using a New Neuro-Fuzzy Representation”, SIAM Conference on Control and its Applications, July 6-8, Denver Colorado, 2009. (in Book of abstracts)
- [C.72] K Zagoris, S. A. Chatzichristofis, Nikolas Papamarkos and Y. S. Boutalis, “Img(Anaktisi): A Web Content Based Image Retrieval System.”, «2nd International Workshop on Similarity Search and Applications (SISAP)», Proceedings: IEEE Computer Society, pp.154-155, Prague, Czech Republic, August 29-30, 2009.
- [C.73] S. A. Chatzichristofis, Y. S. Boutalis and Mathias Lux, “Img(Rummager): An Interactive Content Based Image Retrieval System.”, «2nd International Workshop on Similarity Search and Applications (SISAP)», Proceedings: IEEE Computer Society, pp.151-153, Prague, Czech Republic, August 29-30, 2009.
- [C.74] D. Theodoridis, Y. Boutalis and M. Christodoulou, “A new Neuro-Fuzzy Dynamical System Definition Based on High Order Neural Network Function Approximators”, Proceedings of the European Control Conference ECC-09, pp. 3305-3310, Budapest, Hungary, August 23-26, 2009.
- [C.75] Y. Boutalis, M. Christodoulou and D. Theodoridis, “A new Neuro-Fuzzy Method for Direct Adaptive Control of Unknown Nonlinear Systems with Robustness Analysis”, Proceedings of the European Control Conference ECC-09, pp. 934-939, Budapest, Hungary, August 23-26, 2009.
- [C.76] D. Theodoridis and Y. Boutalis “A new Neuro-Fuzzy Method for Direct Adaptive Control of Unknown Nonlinear Systems in Brunovski Canonical Form with Robustness Analysis”, Proceedings of the European Control Conference ECC-09, pp. 3317-3322, Budapest, Hungary, August 23-26, 2009.

- [C.77] G. Tampakis, K. Schmidt and Y. Boutalis, “Mobile Robot Navigation based on Fuzzy Discrete Event Systems”, Proceedings of the 2nd IFAC International Conference on Intelligent Control Systems and Signal Processing – ICONS 2009, Istanbul, Turkey, Session ICONS FL, pages 6, September 21-23, 2009.
- [C.78] M. A. Christodoulou, Y. S. Boutalis and D. C. Theodoridis, “Indirect Adaptive Control of Unknown Nonlinear Systems with Parametric and Dynamic Uncertainties: A new Neuro-Fuzzy Method, Employing a Novel Approach of Parameter Hopping”, Proceedings of the 2nd IFAC International Conference on Intelligent Control Systems and Signal Processing – ICONS 2009, Istanbul, Turkey, Session ICONS FL, pages 6, September 21-23, 2009.
- [C.79] T. Kottas, Y. Boutalis and M. Christodoulou, “Bilinear Adaptive Parameter Estimation in Fuzzy Cognitive Networks”, The 19th International Conference on Artificial Neural Networks, 14-17 September, Limassol, Cyprus, 2009, proceedings at Lecture Notes in Computer Science, ISBN 978-3-642-04276-8, pp. 875-884, Springer-Verlag, 2009.
- [C.80] S. A. Chatzichristofis, Y. S. Boutalis, “SpCD - Spatial Color Distribution Descriptor. A Fuzzy Rule Based Compact Composite Descriptor Appropriate for Hand Drawn Color Sketches Retrieval”, 2nd International Conference on Agents and Artificial Intelligence (ICAART), Valencia Spain, pp. 58-63, 22-24 January, 2010. (The paper received the Best paper Award of the conference)
- [C.81] H. Psilakis, Y. S. Boutalis, T. Giotis and M. Christodoulou “Adaptive Identification of Fuzzy Cognitive Networks”, 4th International Symposium on Communications, Control and Signal Processing, ISCCSP 2010, pages 6, Limasol, Cyprus, 3-5 March 2010.
- [C.82] S. A. Chatzichristofis, Y. S. Boutalis and Avi Arampatzis, “Accelerating Image Retrieval Using Binary Haar Wavelet Transform on the Color and Edge Directivity Descriptor”, The 5th International Multi-Conference on Computing in the Global Information Technology (ICCGI 2010), September 20 - 25, 2010, Valencia, Spain, Proceedings: IEEE Computer Society, pp. 41 – 47, 2010. (Received the Best paper Award -BPA- of the conference)
- [C.83] S. A. Chatzichristofis and Y. S. Boutalis, “Performance Study Of The Most Commonly Used Image Retrieval Evaluation Methods”, The Sixth IASTED International Conference on Advances in Computer Science and Engineering (ACSE), March 15 to 17, Sharm El Sheikh, Egypt, pp.27-32, 2010.
- [C.84] S. A. Chatzichristofis, Y. S. Boutalis, D. A. Karras and B. G. Mertzios, "Content based mrsi image indexing and retrieval involving a fuzzy descriptor.", IEEE International Conference on Imaging Systems and Techniques (IST), July 1 - 2, Thessaloniki, Greece, pp. 373 - 378, 2010.
- [C.85] K. Zagoris, S. A. Chatzichristofis, N. Papamarkos and Y. S. Boutalis, “Automatic Image Annotation and Retrieval Using the Joint Composite Descriptor”, 14th Panhellenic Conference on Informatics (PCI), September 10 to 12, Tripoli, Greece, Proceedings: IEEE Computer Society, pp.143-147, 2010.
- [C.86] Y. S. Boutalis, K. Schmidt, "Multi-objective decision making using fuzzy discrete event systems: A mobile robot example", 18th Mediterranean Conference on Control and Automation, pp. 575-580, Marrakech, Morocco, June 23-25, 2010.
- [C.87] N. A. Sofianos, Y. S. Boutalis, and M. A. Christodoulou, "Feedback Linearization Adaptive Fuzzy Control for Nonlinear Systems: A Multiple Models Approach", 19th Mediterranean Conference on Control and Automation, pp. 1453-1459, Aquis Corfu Holiday Palace, Corfu, Greece, June 20-23, 2011.
- [C.88] T. Giotis, M. A. Christodoulou and Y. S. Boutalis,, " Identification of Combination Therapy Models using a Neuro Fuzzy Identification Scheme", 19th Mediterranean Conference on Control and Automation, pp. 1283-1288, Aquis Corfu Holiday Palace, Corfu, Greece, June 20-23, 2011.
- [C.89] S. A. Chatzichristofis, C. Iakovidou, and Y. S. Boutalis, “Content Based Image Retrieval Using Visual-Words Distribution Entropy”, 5th International Conference on Computer Vision / Computer Graphics Collaboration Techniques and Applications – MIRAGE 2011, Lecture Notes in Computer Science, pp. 204-215, Rocquencourt, France, October 10-12, 2011.
- [C.90] S. A. Chatzichristofis, K. Zagoris, Y. Boutalis and Avi Arampatzis, “A Fuzzy Rank-Based Late Fusion Method For Image Retrieval”, The 18th International Multi Media Modeling Conference (IMMM), Lecture Notes in Computer Science, pp. 463–472, Klagenfurt, Austria, January 4-6, 2012.
- [C.91] L. T. Tsochatzidis, A. Ch. Kapoutsis, N. I. Dourvas, S. A. Chatzichristofis, Y. S. Boutalis and K. Zagoris, “TSOKADO: An Image Search Engine Performing Recursive Query Recommendation Based on Visual Information”, The Fifth International Conference on Advances in Computer-Human Interactions (ACHI 2012)», pp. 106-111, Valencia, Spain, January 30 – February 2, 2012.
- [C.92] Y. Boutalis, T. Moor and K. Schmidt, "Fuzzy Hybrid Systems Modeling with Application in Decision Making and Control", IEEE International Conference "Intelligent Systems", IS'12, pp. 290- 296, Sofia, Bulgaria, September 6-8, 2012.

- [C.93] N. Sofianos, Y. Boutalis, B. Mertzios and O. Kosmidou 'Adaptive Switching Control of Fuzzy Dynamical Systems Based on Hybrid T-S Multiple Models", IEEE International Conference "Intelligent Systems", IS'12, pp. 397 - 402, Sofia, Bulgaria, September 6-8, 2012. (The paper was selected among the best papers of the conference)
- [C.94] S. Chatzichristofis, O. Marques, M. Lux and Y. Boutalis, 'Image Encryption using the Recursive Attributes of the eXclusive-OR (XOR) Filter on Cellular Automata', 10th International Conference on Cellular Automata for Research and Industry (ACRI2012), Lecture Notes in Computer Science 7495, pp. 340-350, Santorini, Greece, September 24-27, 2012.
- [C.95] Y. Boutalis, M. Christodoulou and P. Andreadis, "Bilinear Neurofuzzy Modeling for Adaptive Approximation and Indirect Control of Nonlinear Systems", 21st Mediterranean Conference on Control and Automation, pp. 284-289, June 25-28, Chania, Crete – GREECE, 2013.
- [C.96] N. Sofianos and Y. Boutalis, "Improving the Performance of Multiple Models Fuzzy Control by Using Semi-Fixed and Adaptive Models", 21st Mediterranean Conference on Control and Automation, pp. 278-283, June 25-28, Chania, Crete – GREECE, 2013.
- [C.97] L. Tsochatzidis, C. Iakovidou, S. Chatzichristofis and Y. Boutalis, "Golden retriever: a Java based open source image retrieval engine ", Proceedings of the 21st ACM international conference on Multimedia - MM13, pp. 847-850, October 21-25, Barcelona-Spain, 2013.
- [C.98] I. Michailidis, S. Baldi, E. B. Kosmatopoulos and Y. Boutalis, "Optimization-Based Active Techniques for Energy Efficient Building Control. Part I: Optimization Algorithms", International Conference on Buildings Energy Efficiency and Renewable Energy Sources (BEE-RES 2014), pp. 35-38, June 1-3, Kozani, Greece, 2014.
- [C.99] I. Michailidis, S. Baldi, E. B. Kosmatopoulos and Y. Boutalis, "Optimization-Based Active Techniques for Energy Efficient Building Control. Part II: Real-life Experimental Results", International Conference on Buildings Energy Efficiency and Renewable Energy Sources (BEE-RES 2014), pp. 39-42, June 1-3, Kozani, Greece, 2014.
- [C.100] C. Iakovidou, N. Anagnostopoulos, A. Ch. Kapoutsis, Y. Boutalis and S. A. Chatzichristofis, "Searching Images with MPEG-7 (& MPEG-7 like) Powered Localized Descriptors: the SIMPLE Answer to Effective Content Based Image Retrieval", 12th International Content Based Multimedia Indexing Workshop, pages 6, June 18-20, Klagenfurt – Austria, 2014.
- [C.101] N. Anagnostopoulos, C. Iakovidou, A. Amanatiadis, Y. Boutalis and S. A. Chatzichristofis, "Two- Staged Image Colorization Based on Salient Contours", 2014 IEEE International Conference On Imaging Systems and Techniques (IST' 2014), pp. 381 – 385, October 14-17, Santorini – Greece, 2014.
- [C.102] C. Iakovidou, L. Bampis, S. A. Chatzichristofis, Y. Boutalis and A. Amanatiadis, "Color and Edge Directivity Descriptor on GPGPU", 23rd Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP15), March 04-05, Turku, Finland 2015.
- [C.103] T. Kottas, D. Stimoniaris, D. Tsiamitros, V. Kikis, Y. Boutalis and E. Dialynas, "New Operation Scheme and Control of Smart Grids using Fuzzy Cognitive Networks", PowerTech Eindhoven 2015, June 29 - July 2, Eindhoven, Germany, 2015.
- [C.104] L. Maltoudoglou, Y. Boutalis and N. Loukeris, "A fuzzy system model for financial assessment of listed companies", Proceedings of the 2015 6th International Conference on Information, Intelligence, Systems and Applications (IISA), July 6-8 2015, Corfu – Greece, 2015.
- [C.105] N. Loukeris, Y. Boutalis, A. Arampatzis, S. Livanis and L. Maltoudoglou, "Computational intelligence in optimal portfolio selection — The PI model", Proceedings of the 2015 6th International Conference on Information, Intelligence, Systems and Applications (IISA), July 6-8 2015, Corfu – Greece, 2015.
- [C.106] L. N. Loukeris, Y. Boutalis, A. Arampatzis, S. Livanis and L. Maltoudoglou, "Hybrid Jordan Elman nets in portfolio selection", Proceedings of the 2015 6th International Conference on Information, Intelligence, Systems and Applications (IISA), July 6-8 2015, Corfu – Greece, 2015.
- [C.107] N. Anagnostopoulos, C. Iakovidou, S. A. Chatzichristofis, Y. Boutalis and M. Lux, "Localized global descriptors for image retrieval: An extensive evaluation on adaptations to the SIMPLE model", Proceedings of the 2016 IEEE International Conference on Imaging Systems and Techniques (IST), pp. 312-317, October 4-6 2016, Chania – Greece, 2016.
- [C.108] C. Korkas, S. Baldi, I. Michailidis, Y. Boutalis and E. B. Kosmatopoulos, "A Supervisory Approach to Microgrid Demand Response and Climate Control", 24th Mediterranean Conference on Control and Automation, pp. 1140-1145, June 21-24, 2016, Athens, Greece.