Costas Papaloukas – Associate Professor of Bioinformatics

Personal Details

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Education

1992–1993
National and Kapodistrian University of Athens, Department of Informatics.

1993–1997
University of Ioannina, Department of Informatics, deree: 8.33 (B).
Diploma Thesis: "Electrocardiographic Signal Processing using Computers".
Supervisor: Dimitrios I. Fotiadis.

1997–2001
University of Ioannina, Medical School, grade: A.
PhD Thesis: "Use of Expert Systems in the Analysis and Diagnosis of the Electrocardiogram".
Supervisor: Dimitrios Glaros (research was conducted at the Unit of Medical Technology and Intelligent Information Systems, Department of Informatics).

Foreign Languages
- First Certificate in English, University of Cambridge, grade A.
- One-year courses in German.

Scholarships

- Scholarship from the University of Ioannina for my grades for the whole duration of my studies.
- Scholarship from the State Scholarships Foundation for scoring the highest grades in my class for three years (1994-1997).

Visiting Research Scientist

2005
Computational Physics and Materials Science Laboratory, Harvard University, USA.

2006
Stockholm Bionformatics Center – Center for Biomembrane Research (SBC/CBR), Stockholm University, Sweden.

Invited Talks	**2005**
	"Computational management and analysis of protein data", Biological Sciences and Applications in the University of Ioannina: Education, research, professional prospects, University of Ioannina.
	"Computational analysis of proteins", Computational Physics and Materials Science Laboratory, Department of Physics, Harvard University, USA.
	2006
	"Clinical decision support systems: application to ECG diagnosis", in Clinical Decision Support Systems (CDSSs): tools and frameworks, NOESIS 2nd annual seminar. Science and Technology Park of Epirus, Ioannina, Greece.
	"Improving the predictions of the residue distance from the membrane center in α-helical membrane proteins", Center for Biomembrane Research, Department of Biochemistry and Biophysics, Stockholm University, Sweden.
	"Machine learning from biological data", Stockholm Bionformatics Center, Department of Biochemistry and Biophysics, Stockholm University, Sweden.
	2007
	"Z-coordinates of α-helical membrane proteins: prediction and applications", EMBRACE Workshop in membrane bioinformatics, Stockholm, Sweden.
	2012
	"Machine learning from biomedical data", Seminars at the Department of Mathematics, University of Ioannina.
	2014
	"Novel bioinformatics strategies for biomarker prediction", HEALS concept and methodology Workshop, Thessaloniki, Greece.
	"Recognition of Novel Diagnostic Biomarkers for Hepatitis Using Bioinformatics and Molecular Biology Tools (HCV-net)", "New Knowledge: Research and Technological Developments in Epirus" workshop, Ioannina, Greece.
	2019
	"Big Data Analytics in Healthcare", 84th Thessaloniki International Fair.

Teaching Experience	• Undergraduate courses: 9; Dissertations: 17
	• Graduate courses: 4; Dissertations: 2
	• PhD Dissertations: 3; Completed: 1

1997–2001:
Medical Physics laboratory exercises (Assistant), 1st year, Medical School, University of Ioannina.

1998–2002:
 "Introduction in Computer Science" (Assistant), 1st year, Medical School, University of Ioannina.

1999–2000:
"Computers", 1st year, Dept. of Biochemistry, University of Ioannina.

"Personnel Training", "Computer Training and Education" project, University of Ioannina.

2000–2001:
"Informatics I", 3rd year Dept. of Applied Agro-Ecology, University of Ioannina.

"Language Teaching", "Pre-training–training in diagnostic and therapeutic medical equipment and current health issues" project, University of Ioannina.

2003:
Adjunct Faculty (Assistant Professor) at the Dept. of Materials Science and Engineering, University of Ioannina

"Biomaterials and Medical Technology", 3rd year, Dept. of Materials Science and Engineering, University of Ioannina.

"Introduction to Informatics (Theory and Application)", 1st year, Dept. of Sciences of Art students, University of Ioannina.

2003–2008:
Lecturer at the Dept. of Biological Applications and Technology, University of Ioannina.

2003– :
"Introduction to Informatics", 1st year, Dept. of Biological Applications and Technology, University of Ioannina.

"Bioinformatics", 4th year, Dept. of Biological Applications and Technology, University of Ioannina.

"Special Issues in Bioinformatics", 5th year, Dept. of Biological Applications and Technology, University of Ioannina.

2004–2008:
"Information Technology in Endoscopy and Research", 1st year, Nursing-Pathology Masters Program, Medical School, University of Ioannina.

"Multimedia and Internet", 1st year, Nursing-Pathology Masters Program, Medical School, University of Ioannina.

"Patient Electronic Record", 1st year, Nursing-Pathology Masters Program, Medical School, University of Ioannina.

"Patient Electronic Record", 1st year, Nursing-Pathology Masters Program, Medical School, University of Ioannina.

2008–2014:
Assistant Professor at the Dept. of Biological Applications and Technology, University of Ioannina.

2014– :
Associate Professor at the Dept. of Biological Applications and Technology, University of Ioannina.

Research Projects

- European Projects: 14
- National Projects: 14; Scientific Director: 4

1995-1997:
European project: "EPET II – Generalised system for medical image processing and management (NIKAS)".

1998:
European project: "TEMeTeN. Towards a European Medical and Tele-working Network in Europe".

European project: "Telematic Center of Western Greece, Epirus and Ionian Islands-Phase 1, INTERREG II Greece-Italy".

1998-1999:
European project: "New instruments for prompt medical diagnosis and biotechnology applications".

1998-2000:
European project: "PEPER – Integrated Interface for ECG Analysis Using Advanced Methods and Result Demonstration According to ISO 9241".

1999-2001:
European project: ""EPET II – Advanced Techniques on Signal Processing with applications on Medical Technology and Telecommunications".

2002-2003:
European project: "SafeGuard: Action for enhancement of Safety and Guarding of heart for professional drivers".

2003:
European project: "LifeBelt: An intelligent wearable device for health monitoring during pregnancy".

2004-2005:
European project: ""Human Networks – Intelligent information systems and automated diagnostic techniques in Medicine".

Surrogate representative in the administrative council of the Developmental Cooperation "EYELIXIA" (EQUAL: "Adaptability of tourism and local products in Epirus").

Scientific director of the project: "Network study, design, development, and maintainance of the University of Western Macedonia".

Scientific director of the project: "Personnel education of the Epirus PESYP».

National project: "Reformation of the undergraduate programs in the University of Ioannina".

National project: "Expanding the Higher Education – Dept. of Biological Applications and Technology".

National project: "PYTHAGORAS – Biological study of the allochthonous type Carassius Gibelio (Bloch, 1782) and the ecological repercussions from its import in internal waters of Greece".

National project: "PYTHAGORAS – Intelligent systems for analyzing electrical heart signals".

National project: "EPEAEK II – Practice training of higher education student".

2005:
National project: "angioCARE".

2006-2008:
European project: "MATCH – Automated diagnosis system for the treatment of colon cancer by discovering mutations on tumour suppressor genes".

National project: Operational Programme 'Competitiveness' (OPCE) – "Comparative study of population structure and biological strategies of the Carassius gibelio species (Bloch, 1782) in Western Greece and in the Donbass region of Ukraine".

2009-2010:
European project: ICT-2007, Large-scale Integrating Project (IP), "ARTreat – Multi-level patient-specific artery and atherogenesis model for outcome prediction, decision support treatment, and virtual hand-on training".

2012–2015:
Scientific director of the National project: "HCV-net – Recognition of New Diagnostic Biomarkers for Hepatitis Using Combined Tools from Bioinformatics and Molecular Biology".

Department representative of the National project: "Open Academic Courses in the University of Ioannina".

2013–2014:
European project: FP7-ENV.2013.6.4-1, Collaborative project "HEALS – Health and Environment-wide Associations based on Large population Surveys".

National project: "NSRF 2007-2013 – Practice training of of the Department of Biological Applications and Technologies".

2017-2018:
Scientific director of the National project "HFRI" – "Multidimensional computational methods for modeling the diagnosis, prognosis and treatmanet of cancer".

2018– :
European project: H2020-EU.3.1.1, «ImmunAID – Immunome project consortium for AutoInflammatory Disorders».

2020– :
European project: H2020-EU.3.1.1, «HarmonicSS – HARMONIzation and integrative analysis of regional, national and international Cohorts on primary Sjögren's Syndrome (pSS) towards improved stratification, treatment and health policy making».

Publications

A. Summary
- Journals: 39
- Conference proceedings: 41
- Conference abstracts: 14
- Book chapters: 12
- Books: 6
- Electronic titles: 1
- Citations: 1774 (h-index: 23)

B. Journals

1. C. Papaloukas, D.I. Fotiadis, A. Likas, A.P. Liavas and L.K. Michalis: "A knowledge-based technique for automated detection of ischemic episodes in long duration electrocardiograms", Medical & Biological Engineering & Computing, Vol. 39, No. 1, pp. 105–112, 2001.
2. C. Papaloukas, D.I. Fotiadis, A. Likas, C.S. Stroumbis and L.K. Michalis: "Use of a novel rule-based expert system in the detection of changes in the ST segment and the T wave in long duration ECGs", Journal of Electrocardiology, Vol. 35, No. 1, pp. 27–34, 2002.
3. C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis: "An ischemia detection method based on artificial neural networks", Artificial Intelligence in Medicine, Vol. 24, No. 2, pp. 167–178, 2002.
4. C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis: "Automated methods for ischemia detection in long-duration ECGs", Cardiovascular Reviews and Reports, Vol. 24, No. 6, pp. 313–320, 2003.
5. Y. Goletsis, C. Papaloukas, D.I. Fotiadis, A. Likas, L.K. Michalis: "Automated ischemic beat classification using genetic algorithms and multicriteria decision analysis", IEEE Transactions on Biomedical Engineering, Vol. 51, No. 10, pp. 1717-1725, 2004.
6. E.C. Karvounis, C. Papaloukas, K. Papanikolaou and D.I. Fotiadis: "A wearable health monitoring system during pregnancy", Journal for the Quality of Life Research, Vol. 2, No. 1, pp. 139-144, 2004.
7. S.P. Karakitsios, C. Papaloukas, P.A. Kassomenos and G.A. Pilidis: "Assessment and prediction of benzene concentrations in a street canyon using artificial neural networks and deterministic models. Their response to "what if" scenarios", Ecological Modelling, Vol. 193, No. 3-4, pp. 253-270, 2006.
8. T.P. Exarchos, C. Papaloukas, D.I. Fotiadis and L.K. Michalis: "An association rule mining-based methodology for automated detection of ischemic ECG beats", IEEE Transactions on Biomedical Engineering, Vol. 53, No. 8, pp. 1531-1540, 2006.
9. P. Kassomenos, S. Karakitsios and C. Papaloukas: "Estimation of daily traffic emissions in a South-European urban agglomeration during a workday.

Evaluation of several "what if" scenarios", Sci Total Environ, Vol. 370, No. 2-3, pp. 480-490, 2006.

10. M.G. Tsipouras, T.P. Exarchos, C. Papaloukas et al.: "Automatic creation of decision support systems: Application and results in the cardiovascular diseases domain", Information Technology in Healthcare, Vol. 4, No. 4, pp. 222-230, 2006.

11. I. Kagalou, G. Economidis, I. Leonardos and C. Papaloukas: "Assessment of a Mediterranean shallow lentic ecosystem (Lake Pamvotis, Greece) using benthic community diversity: Response to environmental parameters", Limnologica - Ecology and Management of Inland Waters, Vol. 36, No. 4, pp. 269-278, 2006.

12. S. Meng, P. Maragakis, C. Papaloukas and E. Kaxiras: "DNA nucleoside interaction and identification with carbon nanotubes", Nano Letters, Vol. 7, No. 1, pp. 45-50, 2007.

13. C. Lampros, C. Papaloukas, T.P. Exarchos, Y. Goletsis and D.I. Fotiadis: "Sequence-based protein structure prediction using a reduced state-space hidden Markov model", Computers in Biology and Medicine, Vol. 37, No. 9, pp. 1211-1224, 2007.

14. C.D. Katsis, T.P. Exarchos, C. Papaloukas, Y. Goletsis, D.I. Fotiadis and I. Sarmas: "A two-stage method for MUAP classification based on EMG decomposition", Computers in Biology and Medicine, Vol. 37, No. 9, pp. 1232-1240, 2007.

15. T.P. Exarchos, M.G. Tsipouras, C.P. Exarchos, C. Papaloukas, D.I. Fotiadis and L.K. Michalis: "A methodology for the automated creation of fuzzy expert systems for ischaemic and arrhythmic beat classification based on a set of rules obtained by a decision tree", Artificial Intelligence in Medicine, Vol. 40, No. 3, pp. 187-200, 2007.

16. S.P. Karakitsios, C. Papaloukas, P.A. Kassomenos and G.A. Pilidis: "Assessment and prediction of exposure to benzene at filling station employees", Atmospheric Environment, Vol. 41, No. 40, pp. 9555-9569, 2007.

17. T.P. Exarchos, C. Papaloukas, C. Lampros and D.I. Fotiadis: "Mining sequential patterns for protein fold recognition", Journal of Biomedical Informatics, Vol. 41, No. 1, pp. 165-179, 2008.

18. C. Papaloukas, E. Granseth, H. Viklund and A. Elofsson: "Estimating the length of transmembrane helices using Z-coordinate predictions", Protein Science, Vol. 17, No. 2, pp. 271-278, 2008.

19. P. Kassomenos, C. Papaloukas, M. Petrakis and S. Karakitsios: "Assessment and prediction of short term hospital admissions: the case of Athens, Greece", Atmospheric Environment, Vol. 42, No. 30, pp. 7078-7086, 2008.

20. T.P. Exarchos, M.G. Tsipouras, C. Papaloukas and D.I. Fotiadis: "A two-stage methodology for sequence classification based on sequential pattern mining and optimization", Data & Knowledge Engineering, Vol. 66, No. 3, pp. 467-487, 2008.

21. K.P. Exarchos, C. Papaloukas, T.P. Exarchos, A.N. Troganis and D.I. Fotiadis: "Prediction of cis/trans isomerization using feature selection and support vector machines", Journal of Biomedical Informatics, Vol. 42, No. 1, pp. 140-149, 2009.

22. K.P. Exarchos, T.P. Exarchos, C. Papaloukas, A.N. Troganis and D.I. Fotiadis: "Detection of discriminative sequence patterns in the neighborhood of proline cis peptide bonds and their functional annotation", BMC Bioinformatics, 10 (113), 2009.

23. C. Lampros, C. Papaloukas, K. Exarchos, D.I. Fotiadis and D. Tsalikakis: "Improving the protein fold recognition accuracy of a reduced state-space Hidden Markov model", Computers in Biology and Medicine, Vol. 39, No. 10, pp. 907-914, 2009.

24. T.P. Exarchos, M.G. Tsipouras, C. Papaloukas and D.I. Fotiadis: "An optimized sequential pattern matching methodology for sequence classification", Knowledge and Information Systems, Vol. 19, No. 2, pp. 249-264, 2009.

25. D.A. Sarigiannis, S.P. Karakitsios, A. Gotti, C.L. Papaloukas, P.A. Kassomenos and G.A. Pilidis: "Bayesian algorithm implementation in a real time calculating risk assessment model on benzene", Sensors, Vol. 9, pp. 731-755, 2009.

26. K.P. Exarchos, T.P. Exarchos, C. Papaloukas, A.N. Troganis and D. I. Fotiadis: "PBOND: Web server for the prediction of proline and non-proline cis/trans isomerization", Genomics, Proteomics and Bioinformatics, Vol. 7, No. 3, pp. 138-142, 2009.

27. E.C. Karvounis, M.G. Tsipouras, C. Papaloukas, D.G. Tsalikakis, K.K. Naka and D.I. Fotiadis: "A non-invasive methodology for fetal monitoring during pregnancy", Methods of Information in Medicine, Vol. 49, No. 3, pp. 238-253, 2009.

28. P. Kassomenos, S. Vardoulakis, R. Borge, J. Lumbreras, C. Papaloukas and S. Karakitsios: "Comparison of statistical clustering techniques for the classification of modelled atmospheric trajectories", Theoretical and Applied Climatology, Vol. 102, No. 1, pp. 1-12, 2010.

29. K.P. Exarchos, T.P. Exarchos, C. Papaloukas, G. Rigas, D.I. Fotiadis: "Extraction of consensus protein patterns in regions containing non-Proline cis peptide bonds and their functional assessment", BMC Bioinformatics, 12 (142), 2011.

30. Ch. Katsios, C. Papaloukas, M. Tzaphlidou and D.H. Roukos: "Next-generation sequencing-based testing for cancer mutational landscape diversity: clinical implications?", Expert Review of Molecular Diagnostics, 12 (7), pp. 667-670, 2012.

31. D.H. Roukos, D.E. Ziogas, C. Papaloukas and G. Baltogiannis: "Novel Wnt signaling and other pathway inhibitors in the colorectal cancer genomic landscape era", Future Oncology, 8 (11), pp. 1373-1376, 2012.

32. D.H. Roukos, C. Papaloukas and M. Tzaphlidou: "From targeted monotherapy to combined BRAF-MEK inhibitors and integrated genome analysis for melanoma treatment", Future Oncology, 9 (1), pp. 5-8, 2013.

33. Ch.S. Katsios, C. Papaloukas and D.H. Roukos: "Gene expression 'signature' limitations and genome architecture-based perspectives for robust cancer biomarkers", Biomarkers in Medicine, 7(1), pp. 79-82, 2013.

34. C. Lampros, Th. Simos, T.P. Exarchos, K.P. Exarchos, C. Papaloukas and D.I. Fotiadis: "Assessment of optimized Markov models in protein fold classification", Journal of Bioinformatics and Computational Biology, 12 (4): 1450016, 2014.

35. Th. Simos, U. Georgopoulou, G. Thyphronitis, J. Koskinas and C. Papaloukas: "Analysis of Protein Interaction Networks for the Discovery of Hepatitis B and C Biomarkers", IEEE Journal of Biomedical and Health Informatics – Special issue on Bioinformatics in Clinical Environments, 19 (1), pp. 181-189, 2015.

36. K. Kourou, C. Papaloukas, D.I. Fotiadis: "Integration of Pathway Knowledge and Dynamic Bayesian Networks for the Prediction of Oral Cancer Recurrence", IEEE J Biomed Health Inform., 21(2):320-7, 2017.

37. S. Tsiomita, U. Georgopoulou, P.P. Doumba, J. Koskinas, K. Adamidis, C. Papaloukas, G. Thyphronitis: "Evaluation of alternative serum biomarkers to monitor the progression of chronic HBV and HCV infection", Infection, Genetics and Evolution, 58, pp. 17-22, 2018.

38. K. Kourou, G. Rigas, C. Papaloukas, M. Mitsis, D.I. Fotiadis: "Cancer classification from time series microarray data through regulatory Dynamic Bayesian Networks". Computers in Biology and Medicine, 116:103577, 2020.

39. K. Kourou, V. Pezoulas, E. Georga, Th. Exarchos, C. Papaloukas, M. Voulgarelis, A. Goules, A. Nezos, A.G. Tzioufas, H.M. Moutsopoulos, C. Mavragani, D.I. Fotiadis: "Predicting Lymphoma Development by Exploiting Genetic Variants and Clinical Findings in a Machine Learning-Based Methodology With Ensemble Classifiers in a Cohort of Sjögren's Syndrome Patients", IEEE Open Journal of Engineering in Medicine and Biology, 1: 49-56, 2020.

C. Conference Proceedings

1. J. Vakalis, I. Kalaitsopoulos, C. Papaloukas, A. Poulis, D.I. Fotiadis and E. Kountouris: "A methodology for developing a medical multimedia education system based on a introductory textbook", 3rd Panhellenic Symposium with International Participation: Didactics of Mathematics and Informatics in Education, pp. 297–306, 1997.

2. C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis: "A rule based technique for the automated detection of ischemic episodes from ECG", European Medical and Biological Engineering Conference (EMBEC '99), Vol. 37, Suppl. 2, pp. 728–729, 1999.

3. C. Papaloukas, D.I. Fotiadis, A. Likas, A.P. Liavas and L.K. Michalis: "A robust knowledge-based technique for ischemia detection in noisy ECGs", 4th

International Conference on Knowledge-Based Intelligent Engineering Systems & Allied Technologies (KES), pp. 768–771, 2000.

4. C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis: "A neural network methodology for ischaemia detection in long duration electrocardiograms", 4th International Conference on Neural Networks and Expert Systems in Medicine and Healthcare (NNESMED), pp. 28–33, 2001.

5. Y. Goletsis, C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis: "Ischaemic beat classification based on multicriteria decision analysis", 3rd European Symposium on Biomedical Engineering and Medical Physics, p. 33, 2002.

6. C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis: "An expert system for ischaemia detection based on parametric modelling and artificial neural networks", European Medical and Biological Engineering Conference (EMBEC), pp. 742–743, 2002.

7. Y. Goletsis, C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis: "A multicriteria decision based approach for ischaemia detection in long duration ECGs", IEEE EMBS Fourth International Conference on Information Technology Applications in Biomedicine (ITAB), pp. 230–233, 2003.

8. C. Papaloukas, Y. Goletsis, D.I. Fotiadis, A. Likas and L.K. Michalis: "HySMID: An ischemia diagnosis system using genetic algorithms and multicriteria decision analysis", IEEE Computers in Cardiology, pp. 343-346, 2003.

9. E.C. Karvounis, C. Papaloukas, K. Papanikolaou and D.I. Fotiadis: "LIFEBELT: A wearable platform for health monitoring during pregnancy", 2nd International Conference on Information Communication Technologies in Health (ICICTH), pp. 268-273, 2004.

10. E.C. Karvounis, C. Papaloukas, D.I. Fotiadis and L.K. Michalis: "Fetal heart rate extraction from composite maternal ECG using complex continuous wavelet transform", Computers in Cardiology (CinC), pp. 737-740, 2004.

11. S.P. Karakitsios, C. Papaloukas, G.A. Pilidis and P.A. Kassomenos: "Development of a neural network tool to estimate traffic emissions in Athens, Greece", 10th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, pp. 98-103, 2005.

12. C Lampros, C. Papaloukas, Y. Goletsis and D.I. Fotiadis: "Prediction of protein structure using a hidden Markov model with limited number of states", European Medical and Biological Engineering Conference (EMBEC), cd paper 1479, 2005.

13. T.P. Exarchos, C. Papaloukas and D.I. Fotiadis: "A novel methodology for myocardial ischaemia diagnosis using association rules", European Medical and Biological Engineering Conference (EMBEC), cd paper 1545, 2005.

14. C. Papaloukas, T. Nikolaidi, Y. Goletsis and D.I. Fotiadis: "Probabilistic artificial neural networks for tissue classification using gene expression profiles", European Medical and Biological Engineering Conference (EMBEC), cd paper 1604, 2005.

15. Y. Goletsis, C. Papaloukas, C.D. Katsis and D.I. Fotiadis: "Applying kernel based methods for bankruptcy prediction: A comparative examination of SVMs and RBF ANNs", 2nd International Conference on Advances in Financial Economics (AFE), 2005.

16. T.P. Exarchos, C. Papaloukas and D.I. Fotiadis: "A decision tree based approach for the identification of ischemic beats in ECG recordings", 7th International Workshop in Mathematical Advances in Scattering and Biomedical Engineering, pp. 312–319, 2005.

17. T.P. Exarchos, M.G. Tsipouras, C. Papaloukas et al.: "A framework for decision support systems creation: Application to the cardiovascular diseases domain", eChallenges, 2006.

18. M.G. Tsipouras, T.P. Exarchos, C. Papaloukas et al.: "Automatic creation of decision support systems: Application and results in the cardiovascular diseases domain", 4th International Conference on Information Communication Technologies in Health (ICICTH), pp. 178-185, 2006.

19. T.P. Exarchos, C. Papaloukas, C. Lampros and D.I. Fotiadis: "Protein classification using sequential pattern mining", 28th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), pp. 5814–5817, 2006.

20. J. Siddiqi, B. Akhgar, A. Ihnatowicz, M. Gulisano, Y. Goletsis, D.I. Fotiadis and C. Papaloukas: "Towards an automated diagnosis system for the treatment of colon cancer: Position and Progress", 5th IEEE Conference on Advances in Cybernetic Systems (AICS), pp. 282-287, 2006.

21. T.P. Exarchos, C. Papaloukas, M.G. Tsipouras, C. Lampros and D.I. Fotiadis: "A novel method for protein fold recognition using sequential pattern mining and optimization algorithms", 6th IEEE International Conference on Information Technology Applications in Biomedicine (ITAB), 2006.

22. E.C. Karvounis, C. Papaloukas, M.G. Tsipouras, P. Bougia, D.I. Fotiadis and K.K. Naka: "Remote maternal and fetal health monitoring during pregnancy", IEEE International Symposium on Information Technology Applications in Biomedicine (ITAB), 2006.

23. T.P. Exarchos, N. Giannakeas, Y. Goletsis, C. Papaloukas and D.I. Fotiadis: "Pattern analysis and decision support for cancer through clinico-genomic profiles", Workshop on Quantitative Approaches for Knowledge Discovery and Decision Support in the Post Genomic Era (QA-gen), pp. 78–83, 2007.

24. N. Giannakeas, T.P. Exarchos, Y. Goletsis, C. Papaloukas, D.I. Fotiadis, B. Akhgar and M. Gulissano: "Integrating genetic and clinical data into a decision support system for colon cancer diagnosis", 5th International Conference on Information Communication Technologies in Health (ICICTH), pp. 348–353, 2007.

25. K.P Exarchos, T.P. Exarchos, C. Papaloukas, A. Troganis and D.I. Fotiadis: "Predicting peptide bond conformation using feature selection and the Naïve

Bayes approach", 29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBS), pp. 5009-5012, 2007.

26. C. Lampros, C. Papaloukas, K.P. Exarchos and D.I. Fotiadis: "Improvement in fold recognition accuracy of a reduced state-space hidden Markov model by using secondary structure information in scoring", 29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBS), pp. 5013-5016, 2007.

27. T.P. Exarchos, N. Giannakeas, Y. Goletsis, C. Papaloukas and D.I. Fotiadis: "A framework for cancer decision support based on profiling by integrating clinical and genomic data: Application to colon cancer", 8th International Workshop in Mathematical Advances in Scattering and Biomedical Engineering, 2007.

28. D.I. Fotiadis, T.P. Exarchos, M.G. Tsipouras and C. Papaloukas: "Biosequence classification using sequential pattern mining and optimization", International Special Topic Conference on Information Technology Applications in Biomedicine, pp. 58-61, 2007.

29. P. Kassomenos, C. Papaloukas, S. Vardoulakis, R. Borge, J. Lumbreras, S. Karakitsios: "Comparison of hierarchical, non-hierarchical and neural network clustering techniques for the classification of atmospheric back trajectories", 11th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, pp. 96-100, 2007.

30. K.P. Exarchos, T.P. Exarchos, C. Papaloukas, A. Troganis and D.I. Fotiadis: "Systematic elicitation of sequence patterns associated with non-proline cis peptide bonds", 8th IEEE International Conference on BioInformatics and BioEngineering (BIBE), 2008.

31. K.P. Exarchos, T.P. Exarchos, C. Papaloukas, A. Troganis and D.I. Fotiadis: "Identification of sequence patterns associated with proline cis/trans isomerization", European Conference on Computational Biology (ECCB), 2008.

32. P. Kassomenos, C. Papaloukas, M. Petrakis, D. Sarigiannis and S. Karakitsios: "Novel modelling techniques in assessment and prediction of short term hospital admissions", 7th International Conference on Air Quality - Science and Application, 2009.

33. Th. Simos, G. Thyphronitis and C. Papaloukas: "Topological comparison of protein interaction networks between HBV and HCV", 5th Panhellenic Conference on Biomedical Engineering (ELEVIT), 2013.

34. Th. Simos, C. Papaloukas, G. Thyphronitis and U. Georgopoulou: "Novel biomarkers discovery for HBV and HCV monitoring through protein interaction networks analysis", 13th IEEE International Conference on BioInformatics and BioEngineering (BIBE), 2013.

35. K. Kourou, K.P. Exarchos, C. Papaloukas, D.I. Fotiadis: "A Bayesian Network-based approach for discovering oral cancer candidate biomarkers.", 37th Annual

International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2015), pp. 7663-6, 2015.

36. K. Kourou, G. Rigas, K.P. Exarchos, C. Papaloukas, D.I. Fotiadis: "Prediction of oral cancer recurrence using dynamic Bayesian networks", Annu Int Conf IEEE Eng Med Biol Soc., pp. 5275-5278, 2016.

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D. Conference Abstracts

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2. C. Papaloukas, A. Likas, L.K. Michalis, D.I. Fotiadis and D.A. Sideris, "New method for automated detection of ischemic episodes in long duration ECGs", 20th National Cardiology Conference, 1999

3. C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis, "Advanced automated techniques for myocardial ischemia diagnosis in long duration ECGs", 23rd National Cardiology Conference, 2002.

4. C. Papaloukas, D.I. Fotiadis, A. Likas and L.K. Michalis, "Advanced techniques for the automated diagnosis of myocardial ischemia", 6th Workshop: Research and Technology in Medicine, 2002.

5. Y. Goletsis, C. Papaloukas, D.I. Fotiadis, A. Likas, L.K. Michalis: "Cardiac beat classification through a GA tuned multicriteria method", EURO/INFORMS Joint International Meeting, 2003.

6. Y. Goletsis, C. Papaloukas, C.D. Katsis and D.I. Fotiadis: "Hybrid GA & mulitcriteria automated diagnosis", 20th European Conference on Operational Research (EURO XX), 2004.

7. P. Moutsaki, A. Triantafyllidis, R. Liasko, C. Papaloukas, I. Kagalou, T. Abatzopoulos and I. Leonardos: "Study of the genetic composition of the Prussian Carp Carassius Gibelio (Bloch, 1782) (Cyprinidae) population in lake Pamvotis using microsatellite DNA", 28th Scientific Conference of the Hellenic Society for Biological Sciences, 2006.

8. M. Tsoumani, R. Liasko, P. Moutsaki, I. Kagalou, C. Papaloukas and I. Leonardos: "Study of Carassius Gibelio (Bloch, 1782) (Cyprinidae) growth in relation to environmental effect in 12 Greek lakes", 28th Scientific Conference of the Hellenic Society for Biological Sciences, 2006.

9. Y. Goletsis, T.P. Exarchos, D.I. Fotiadis and C. Papaloukas: "Pattern analysis and decision making for cancer diagnosis, prognosis and classification", in ICT Technologies for Cancer Research and Management in the Post-Genomic Era: Status and Challenges, 6th IEEE International Conference on Information Technology Applications in Biomedicine (ITAB), 2006.

10. Th. Simos, G. Thyphronitis and C. Papaloukas: "Topological analysis of protein interaction networks towards the elicitation of the HCV mechanisms", 5th International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO), 2013.

11. K. Exarchos, K. Kourou, T. Exarchos, C. Papaloukas, M. Karamouzis and D. Fotiadis: "Sequence patterns mediating functions of disordered proteins", 1st World Congress on Geriatrics and Neurodegenerative Diseases Research (GeNeDis), 2014.

12. Th. Simos, U. Georgopoulou, G. Thyphronitis and C. Papaloukas: "Comparative analysis of HBV and HCV protein interaction networks for the discovery of novel biomarkers", Bio Engineering conference (BIOENG), 2014.

13. S. Tsiomita, U. Georgopoulou, P.P. Doumba, T. Simos, J. Koskinas, C. Papaloukas, G. Thyphronitis, EVALUATION OF THE DIAGNOSTIC VALUE OF POTENTIAL BIOMARKERS DURING THE PROGRESSION OF CHRONIC HBV AND HCV INFECTION, 14ο Πανελλήνιο Συνέδριο Κλινικής Χημείας, Ιωάννινα 2016.

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| **E. Book Chapters** | 1. D.I. Fotiadis, A. Likas, L.K. Michalis, C. Papaloukas: "ECG – Automated Diagnosis", in "Wiley Encyclopedia of Biomedical Engineering", Wiley-Interscience, 2006 (ISBN: 978-0-471-24967-2).

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4. D.I. Fotiadis, Y. Goletsis, C. Lampros, C. Papaloukas: "Computational Analysis of Proteins", in "Genomics and Proteomics Engineering in Medicine and Biology", M. Akay (editor), Wiley-IEEE Press, 2007, pp. 227-256 (ISBN: 978-0-471-63181-1).

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12. Christos Lampros, Costas Papaloukas, Themis Exarchos, Dimitrios I. Fotiadis HMMs in Protein Fold Classification, Hidden Markov Models, Springer New York, Volume 1552 of the series Methods in Molecular Biology pp 13-27, 2017 (ISBN: 978-1-4939-6751-3)

F. Books

1. D.I. Fotiadis: "Programming in C/C++", University of Ioannina Press, 1997 (participation in the book examples and exercises).

2. A. Basounas, C. Papaloukas, A. Papadopoulos, P. Parganas and D.I. Fotiadis: "Introduction to Medical Informatics", University of Ioannina Press, 2001.

3. G. Zonios and C. Papaloukas: "Biomaterials and Medical Technology (Course notes)", University of Ioannina, 2003.

4. C. Papaloukas: "Multimedia and Internet (Course notes)", University of Ioannina, 2006.

5. C. Papaloukas: "Databases and Computer Graphics (Course notes)", University of Ioannina, 2006.

6. C. Papaloukas: "Bioinformatics (Course notes)", University of Ioannina, 2011.

G. Electronic Titles

1. Primary Cardiology: Multimedia Title for Educational Use, University of Ioannina, 1996.

Miscellaneous

- Director of the Bioinformatics laboratory, Department of Biological Applications and Technology, University of Ioannina
- Collaborator of the Science and Technology Park of Epirus
- Member of the Epirus Research Foundation
- Member of the Academic Advisers Network of the University of Ioannina
- Member of the Scientific Committee of the Centre for BioSystems & Genomic Network Medicine (CBS.GenNetMed) at the University of Ioannina
- Member of the IEEE Engineering in Medicine & Biology Society
- Surrogate scientific representative of the Greek node (ELIXIR-GR) of the scientific network ESFRI European RI ELIXIR
- Member of several committees at the Dept. of Biological Applications and Technology, University of Ioannina

- Founder member of the students' administrative council, Dept. of Computer Science, University of Ioannina
- Founder member of the postgraduate students' administrative council, Medical School, University of Ioannina

- Participation in the organization of the National Conference on Primary Education in 1996
- Participation in the organization of the 5th National Congress on Mechanics in 1998
- Local Arrangement Chair of the 6th IEEE International Conference on Information Technology Applications in Biomedicine (ITAB) 2006
- Program Chair of the QA-gen Workshop: Quantitative approaches for knowledge discovery and decision support in the post genomic era - 15th International Conference on Conceptual Structures (ICCS) 2007
- Member of the International Program Committee at the 10th IEEE International Conference on Information Technology and Applications in Biomedicine (ITAB) 2010
- Member of the International Program Committee and Session Chair at the 13th IEEE International Conference on BioInformatics and BioEngineering (BIBE) 2013
- Member of the International Program Committee at the 14th IEEE International Conference on BioInformatics and BioEngineering (BIBE) 2014
- Session Chair at the First International Bioengineering Conference (BIOENG) 2014
- Member of the International Program Committee at the International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics (HI-BI-BI) 2015
- Member of the Organizing Committee at the 16th European Conference on Computational Biology (ECCB) 2018

- Reviewer at the 7th Swedish Bioinformatics Workshop (SBW) 2006, Albanova University Center, Stockholm
- Reviewer at the 9th IEEE International Conference on Information Technology and Applications in Biomedicine (ITAB) 2009
- Reviewer at the IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI) 2014, 2016-2019
- Reviewer at the 19th Annual IEEE International Conference on BioInformatics and BioEngineering (BIBE) 2019
- Reviewer at the Oxford Journal of Bioinformatics, the BMC Bioinformatics, the IEEE/ACM Transactions on Computational Biology and Bioinformatics, the IEEE Transactions on Biomedical Engineering, the Neurocomputing, the Computer

Science and Technology, the ICST Ambient Systems, the Scientific World, the Biomedical Signal Processing and Control, the Computational Science and the Network Modeling Analysis in Health Informatics and Bioinformatics Journals

- Editorial Board member of the Conference Papers in Science journal (Bioinformatics section)
- Scientific editor of the Greek translation (chapter 6) of "Bioinformatics and Fuctional Genomics, J. Pevsner, Academic Publications J. Basdra & Co. (3rd edition), 2019
- Published at the University newspaper "Information" the essay entitled "Medical Signal Processing" (1998)

- External evaluator of the Research Promotion Foundation of Cyprus (2009, 2018)
- Internal reviewer of the FP7-THEME 3-ICT Integrated Project FP7-224297 (2009, 2010)
- Internal evaluator of the Network of Research Supporting Laboratories at the University of Ioannina (2009, 2010)