

# **CURRICULUM VITAE & RESEARCH WORK**

**of**

**CONSTANTINOS S. PATTICHIS**

**Professor of Computer Science  
Dean of the School of Pure and Applied Sciences (2008 – 2011)**

**Fellow of IEEE  
Fellow of International Academy of Medical and Biological Engineering (IAMBE)  
Fellow of European Alliance for Medical and Biological Engineering & Science (EAMBES)  
Fellow of Institute of Engineering Technology (FIET)**

<http://www.ehealthlab.cs.ucy.ac.cy/>

**Aug. 2020**

## Executive Summary

### I. General Information

- Diploma of Technician Engineer in Electrical Eng., HTI, Cyprus, 1979.
- B.Sc. in Electrical Eng., University of New Brunswick, Canada, 1983.
- M.Sc. in Biomedical Eng., University of Texas at Austin, USA, 1984.
- M.Sc. in Neurology, University of Newcastle Upon Tyne, UK, 1991.
- Ph.D. in Electronic Eng., QMW, University of London, UK, 1992.
- Research interests: *eHealth, mHealth, eEmergency Systems, Connected Health; Medical Image Analysis Systems: MRI, Ultrasound, Endoscopy, Microscopy; Computational Intelligence and Explainable AI in Medical Systems; Biosignal Analysis: Electromyography; mHealth Interventions Based on X Reality Applications.*
- University of Cyprus, Department of Computer Science, *Professor*, since November 2007, *Associate Professor*, June 2001-October 2007, *Assistant Professor*, September 1996-May 2001; *Lecturer*, September 1993-August 1996; *Research Associate*, September 1992-August 1993.
- University of New Mexico, Department of Electrical and Computer Engineering, *Visiting Assistant Professor*, September 2000 – December 2001 (on sabbatical leave from the University of Cyprus).
- Cyprus Institute of Neurology and Genetics (CING), Department of Computational Intelligence, *Senior Scientist* 1992 - 2004. First employee, played an instrumental role to the Institute's growth and international reputation. Member of the Board of Directors since 2017.
- Marie Curie Fellowship, awarded in 1994 through the European Union on the topic of Image Processing in Histopathology.

### II. Publications

- 120 journal publications; 47 papers published in *IEEE Access, TBE, TITB, TMI, TNN, TUFFC, J-BHI, RBE and IEEE Magazines*. 9 papers published in special issues on *Neural Networks, Medical Imaging, and eHealth Applications*.
- 30 book contributions.
- Co-Author of the book *Despeckle Filtering Algorithms and Software for Ultrasound Imaging*, Morgan & Claypool Publishers, CA, USA, 2008 & 2<sup>nd</sup> edition 2015.
- Co-Editor of the book *M-Health: Emerging Mobile Health Systems*, Springer, USA, 2006. Co-Editor of the book *Ultrasound and Carotid Bifurcation Atherosclerosis*, Springer, London, UK, 2012. Co-Editor of the handbook *Speckle Filtering and Tracking in Cardiovascular Ultrasound Imaging and Video*, The Institution of Engineering and Technology (IET), Stevenage, UK, 2018.
- Guest Co-Editor of 19 Special Issues, including the ones on *Computational Intelligence in Medical Systems*, in IEEE TITB in 2009, on *Citizen Centered e-Health Systems in a Global Healthcare Environment*, also in IEEE TITB in 2010, on *Biomedical Image Technologies and Methods*, in Computerized Medical Imaging and Graphics, in 2010, on *Citizen Centered e-Health Systems in a Global Healthcare Environment* in IEEE TITB in 2011, on *Cardiovascular Health Informatics: Risk Screening and Intervention*, in IEEE TITB in 2012, on *mHealth – Emerging Mobile Health Systems and Services*, in Healthcare Technology Letters in 2016 and on *Integrating Informatics and Technology for Precision Medicine*, in IEEE J-BHI in 2019.

- 18 conference proceedings editorial, including DSP93, DSP95, MEDICON98, IEEE MELECON2000, ITAB06, ITAB09, ISCCSP10, BIBE 2012, MEDICON2016, MELECON2016 and BHI2018.
- 230 conference papers published in refereed conference proceedings of IEEE EMBS, IEEE INNS, IEE, and other.
- Work cited extensively in international publications (according to Google Scholar more than **8900 citations with an h-index of 48**).

### III. Research Grants

- Working in the development of medical diagnostic and mobile health systems for the last 28 years.
- Computer-aided diagnosis systems that provide a unique integration of a great variety of distinctly different technologies such as signal/image/video acquisition, preprocessing, feature extraction, dimensionality reduction, classification, and clinical decision making were developed. The reliability and robustness of the developed diagnostic systems is evident in their integration into clinical practice in several leading hospitals throughout the world. Furthermore, mHealth eEmergency systems were developed that led to the effective wireless communication of critical biosignals and ultrasound video through noisy channels. More specifically, the systems developed cover the following areas:
  - Ultrasound Imaging: An Integrated System for the Assessment of the Risk of Stroke
  - MRI: Quantitative Texture Analysis of Brain White Matter Lesions in Multiple Sclerosis. Assessment of Alzheimer's Disease Based on Texture Analysis of the Entorhinal Cortex.
  - Endoscopy Imaging: A CAD System for the Assessment of Gynaecological Cancer
  - Microscopy Imaging: Breast Cancer Biopsy image Analysis Support System (BASS) and Electron Microscopy (EM) Muscle Imaging System
  - Biosignal Analysis: Electromyographic (EMG) Signal Analysis for Neuromuscular Disorders
  - mHealth eEmergency Systems: Diagnostically Driven Efficient Video Compression Algorithms
  - mHealth Interventions Based on X Reality Applications for Patients with Dementia and Breast Cancer.
- **Total funds managed: 11,802,156 Euro (13,677,262 USD).**  
**Ongoing Research funds for the period 2016-present: 4,041,801 Euro (4,776,632 USD).**

### IV. Dissertation/Theses Supervision

- 16 Ph.D. and 52 M.Sc. students completed their studies. Currently, supervises a research team of 6 Ph.D. and 2 M.Sc. students.

### V. Teaching Experience

- Graduate courses developed and taught: Data Mining, Artificial Intelligence (computational intelligence component), Visual Computing, Computer Vision, and Digital Video Processing.
- Undergraduate courses developed and taught: Image Processing, Computational Learning Systems, Microprocessor Systems, Computer Organization and Assembly Language Programming, and Digital Systems.

## VI. Administrative Experience

- **Elected Dean of the School of Pure and Applied Sciences, University of Cyprus, May 2008 – May 2011.**
- Elected Vice-Chairperson of the Department of Computer Science, University of Cyprus, Nov. 2006 – Mar. 2008; Co-ordinator of the Undergraduate Program Committee, Department of Computer Science (2003 – Mar. 2008).
- Chairperson of the Senate Committee: Disciplinary Audit Committee (Academic), May 2008 – April 2011 and 2018 - 2020; Chairperson of the Ad-hoc Senate Committee on Encouraging Students to be More Active in Social Matters (2006 – 2007); Chairperson of the Senate Committee on Information Systems (2003 – 2004).
- Elected Member of the Board of the School of Pure and Applied Sciences (2003-2006).

## VII. Professional Activities

- **Conference General Chair/Co-Chair of: BHI 2021: IEEE Biomedical and Health Informatics 2021, Athens, Greece, May, 2021. CAIP 2021: Computer Analysis of Images and Patterns, Cyprus, Sept. 29 - Oct. 1, 2021. MECBME 2018: IEEE 4th Middle East Conference on Biomedical Engineering, Gammarth – Tunis, Tunisia. MEDICON 2016: XIV Mediterranean Conference on Medical and Biological Engineering and Computing, Cyprus, March 31st-April 2nd, 2016. MELECON'2016: IEEE Region 18<sup>th</sup> Mediterranean Electrotechnical Conference, Limassol, April 18-20, 2016. BIBE 2012, 12th IEEE International Conference on Bioinformatics and Bioengineering, 2012. ITAB 2009, IEEE Information Technology Applications in Biomedicine; Melecon 2000, IEEE Region 8 Mediterranean Conference on Information Technology and Electrotechnology, 2000; Medicon 1998: Mediterranean Conference on Medical and Biological Engineering and Computing, 1998; DSP95 and DSP&CAES93: International Conference on Digital Signal Processing, 1995 and 1993. Program Co-Chair of BHI 2018, ISCCSP 2010, and ITAB 2006. All conferences were co-organised and co-sponsored by the University of Cyprus and the IEEE.**
- Founding Specialty Section Editor on Connected Health, *Frontiers Digital Health* (2020- ).
- Associate editor for: *IEEE Journal of Biomedical and Health Informatics* (2013- ), *IEEE Transactions on Information Technology in Biomedicine* (2000-2012), and *IEEE Transactions on Neural Networks* (2005-2007).
- Reviewer for: *IEEE Transactions on Biomedical Engineering, Image Processing, Signal Processing, and Engineering in Medicine & Biology Magazine; Medical and Biological Engineering and Computing; Journal of Intelligent Systems; IEEE EMBS, INNS, ICIP and ICASSP* conferences and other.
- Professional Societies Activities: **Fellow of the IEEE** (elected in 2018) **for contributions to the development of medical diagnostic and mobile health systems. Fellow of the International Academy of Medical and Biological Engineering (IAMBE)**, (elected in 2018) **in recognition of outstanding contributions to the field of Medical and Biological Engineering. Fellow of the European Alliance for Medical and Biological Engineering & Science (EAMBES)** (elected in 2018) **in recognition of distinguished leadership and important contributions to research and advocacy of Medical and Biological Engineering & Science. Fellow of Institute of Engineering Technology, FIET** (2011). IEEE EMBS Distinguished Lecturer (2013-2014). Served as President of the IEEE Cyprus Section 1998-2000, the Cyprus Association of Medical Physics and Biomedical Engineering (CAMPBE) 1996-1998, and the Cyprus Society of Medical Informatics (CSMI) 2012 - .

**VIII. Invited Seminars and Presentations**

- Invited seminars and presentations (70) on the topics of Cardiovascular Health Informatics: Predicting the Risk of Stroke Based on Ultrasound Image Analysis of the Atherosclerotic Carotid Plaque, An Overview of M-Health Video Communication Systems, eEmergency Mobile Health Systems, Intelligent Systems on Biosignal Analysis and Medical Imaging, and were given to numerous international conferences, The Rayne Institute - King's College, Universities (Texas at Austin, Columbia, New Mexico, Torino, Groningen), and industry (Medelec Ltd, UK, and Cadwell Labs, USA).

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- J.2 S. Leandrou, D. Lamnisis, I. Mamais, P. Kyriacou, C. S. Pattichis, *Assessment of Alzheimer's Disease Based on Texture Analysis of the Entorhinal Cortex*, **Frontiers in Aging Neuroscience**, vol. 12, Article 176, pp. 1-12, 2020. <https://doi.org/10.3389/fnagi.2020.00176>.
- J.3 A.S. Panayides, M. S. Pattichis, S. Leandrou, C. Pitris, A. Constantinidou, and C.S. Pattichis, *Radiogenomics for Precision Medicine with A Big Data Analytics Perspective*, **IEEE Journal of Biomedical and Health Informatics**, vol. 23, no. 5, pp. 2063-2079, 2019. DOI: [10.1109/JBHI.2018.2879381](https://doi.org/10.1109/JBHI.2018.2879381).

## I. GENERAL INFORMATION

### I.1 Personal Data

Name: Constantinos S. Pattichis

ORCID ID: 0000-0003-1271-8151

Date of birth: January 30, 1959

Nationality: Cypriot

Marital status: Married, three children

Hobbies: Reading, Music, Philately

Business address: Department of Computer Science  
University of Cyprus  
Kallipoleos 75,  
P.O. Box 20537, CY 1678 Nicosia, Cyprus  
Tel. 357-22892697, Mobile. 357-99680711, Fax. 357-22892701  
E-mail: [pattichi@ucy.ac.cy](mailto:pattichi@ucy.ac.cy)  
Website: <http://www.ehealthlab.cs.ucy.ac.cy/>  
Google Scholar:  
<https://scholar.google.com/citations?user=XPzbiZUAAAAJ&hl=en>  
ResearchGate: [https://www.researchgate.net/profile/C\\_Pattichis](https://www.researchgate.net/profile/C_Pattichis)

Home address: 6, Gerasimou str., Strovolos, 2040 Nicosia, Cyprus

### I.2 Research Interests

- eHealth, mHealth, eEmergency Systems, Connected Health
- Medical Image Analysis Systems: MRI, Ultrasound, Endoscopy, Microscopy
- Computational Intelligence and Explainable AI in Medical Systems
- Biosignal Analysis: Electromyography
- mHealth Interventions Based on X Reality Applications

### I.3 Education

- *Doctor of Philosophy in Electronic Engineering*  
University of London, Queen Mary and Westfield College, UK,  
Dissertation: Artificial Neural Networks in Clinical Electromyography  
Topics: Neural Networks, Signal Processing, Pattern Recognition  
March 1992
- *Master of Science in Neurology, Faculty of Medicine*  
Thesis: A Morphological Analysis of the Macro Motor Unit Potential  
University of Newcastle Upon Tyne, UK, May 1991
- *Master of Science in Biomedical Engineering*  
Minor: Computer Engineering  
Thesis: Reliability and Accuracy of the Thermodilution and Impedance



Cardiography Methods in the Measurement of Cardiac Output  
University of Texas at Austin, USA, December 1984

- *Bachelor of Science in Electrical Engineering*  
Major: Computer Engineering  
University of New Brunswick, Canada, May 1983
- *Diploma of Technician Engineer in Electrical Engineering*  
Higher Technical Institute (HTI), Cyprus, July 1979
- Languages: Greek, English

#### **I.4 Honours/Awards**

- Best Paper Award (co-author),  
3<sup>rd</sup> IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI), Athens, Greece, 7-9 June, 2006 (conference paper C.103, and journal paper J.35)
- Student's Best Paper Presentation Award (co-authored with PhD student C. Christodoulou),  
International Joint Conference on Neural Networks, IJCNN'99, Washington DC, 10-16 July, 1999 (conference paper C.51, and journal paper J.24)
- Marie Curie Fellowship,  
International Scientific Cooperation Initiative, Commission of the European Communities  
Image Processing in Histopathology, 1994
- Rotary International Scholarship,  
University of Newcastle Upon Tyne, 1987-1988
- Research Assistant Scholarship, University of Texas at Austin, 1984
- Achievement of Academic Excellence, Faculty of Engineering,  
University of New Brunswick, 1983
- Certificate of Merit, Higher Technical Institute, 1979

#### **I.5 Professional Experience**

##### **University of Cyprus**

Department of Computer Science  
November 2007 -  
*Professor*

##### **University of Cyprus**

Department of Computer Science  
June 2001 – October 2007  
*Associate Professor*

##### **University of New Mexico**

Department of Electrical and Computer Engineering  
September 2000 – December 2001  
*Visiting Assistant Professor*, on sabbatical leave from the University of Cyprus

**University of Cyprus**

Department of Computer Science  
September 1996 – May 2001  
*Assistant Professor*

**University of Cyprus**

Department of Computer Science  
September 1993 -August 1996  
*Lecturer*

**University of Cyprus**

Department of Computer Science  
September 1992 - August 1993  
*Research Associate*

**The Cyprus Institute of Neurology and Genetics  
(The Muscular Dystrophy Research Trust of Cyprus)**

Department of Computer Systems Research  
October 1988 - August 1992, *Senior Research Scientist (full time employed)*  
September 1992 - December 2004, *Senior Scientist (collaborator)*  
January 2009 - December 2017, *Visiting Research Scientist*

**Higher Technical Institute**

Department of Computer Studies  
October 1988 - June 1992  
*Visiting Lecturer*

**Intercollege**

Department of Computer Science  
September 1986 - June 1989  
*Visiting Lecturer*

**University of Newcastle Upon Tyne**

Newcastle General Hospital  
Department of Clinical Neurophysiology  
October 1987 - September 1988  
*Research Assistant*

**Muscular Dystrophy Research Trust of Cyprus**

Department of Clinical Neurophysiology  
April 1986 - September 1987  
*Research Associate*

**Cyprus Pharmaceutical Organization**

Department of Medical Engineering  
January 1985 - March 1986  
*Service Engineer*

**University of Texas at Austin**

Department of Electrical and Computer Engineering  
June 1984 - December 1984  
*Teaching Assistant*

## II. PUBLICATIONS

### Summary numbers

II.1 Archived Journal Papers .....	120
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For Google-Scholar citations see:

<https://scholar.google.com/citations?user=XPzbiZUAAAAJ&hl=el>

**8900 citations, an h-index of 48 and an i10-index of 160.**

### II.1 Archived Journal Papers

- J.1 C.S. Pattichis, and L.E. Baker, *A Comparison of the Tehrmodilution and Impedance Cardiography Methods in the Measurement of Cardiac Output*, **Innovation and Technology in Biology and Medicine**, Vol. 15, No. 1, pp. 114-121, 1994.
- J.2 C.N. Schizas, C.S. Pattichis, S. Michaelides, *Forecasting Minimum Temperature with short time-length Data using Artificial Neural Networks*, **Neural Networks World**, VSP, Vol. 4, No. 2, pp. 219-230, 1994.
- J.3 C.N. Schizas, C.S. Pattichis, C.A. Bonsett, *Medical Diagnostic Systems: A Case for Neural Networks*, **Technology and Health Care**, Vol. 2, pp. 1-18, 1994.
- J.4 C.S. Pattichis, C.N. Schizas, G. Gabriel, *Quantitative Morphological Analysis of Muscle Biopsies Using Artificial Neural Networks*, **Innovation and Technology in Biology and Medicine**, Vol. 15, No. 5, pp. 546-556, 1994.
- J.5 C.S. Pattichis, C.N. Schizas, L. Middleton, *Neural Network Models in EMG Diagnosis*, **IEEE Transactions on Biomedical Engineering**, Vol. 42, No. 5, pp. 486-496, 1995.
- J.6 C. Pattichis, C. Charalambous, L. Middleton, *Efficient Training of Neural Network Models in the Classification of Electromyographic Data*, **Medical & Biological Engineering & Computing**, Special Issue on Electrophysiological Modeling, Vol. 33, No. 3, pp. 499-503, 1995.
- J.7 C.S. Pattichis, and C.N. Schizas, *Genetics-Based Machine Learning Models for the Diagnosis of Certain Neuromuscular Disorders*, **IEEE Transactions on Neural Networks**, Vol. 7, No. 2, pp. 427-439, 1996.

- J.8 F. Schnorrenberg, C.S. Pattichis, K. Kyriacou, M. Vassiliou, C.N. Schizas, *Computer-aided Classification of Breast Cancer Nuclei*, **Technology and Health Care**, Vol. 4, No. 2, pp. 147-161, 1996.
- J.9 C.N. Schizas, C.S. Pattichis, *Learning Systems in Biosignal Analysis*, **Biosystems**, Vol. 41, pp. 105-125, 1997.
- J.10 F. Schnorrenberg, C.S. Pattichis, K.C. Kyriacou, C.N. Schizas, *Computer-Aided Detection of Breast Cancer Nuclei*, **IEEE Transactions on Information Technology in Biomedicine**, Vol. 1, No. 2, pp. 128-140, 1997.
- J.11 C.I. Christodoulou, C.S. Pattichis, W.F. Fincham, *A Modular Neural Network Decision Support System in EMG Diagnosis*, **Journal of Intelligent Systems**, Special Issue on Computational Intelligent Diagnostic Systems in Medicine, Vol. 8, No. 12, pp. 99-143, 1998.
- J.12 C.I. Christodoulou, C.S. Pattichis, *Unsupervised Pattern Recognition for the Classification of EMG Signals*, **IEEE Transactions on Biomedical Engineering**, Vol. 46, No. 2, pp. 169-178, 1999.
- J.13 C.S. Pattichis, M.S. Pattichis, *Time-Scale Analysis of Motor Unit Action Potentials*, **IEEE Transactions on Biomedical Engineering**, Vol. 46, No. 11, pp. 1320-1329, 1999.
- J.14 C.S. Pattichis, A. Elias, *Autoregressive and Cepstral Analysis of Motor Unit Action Potentials*, **Medical Engineering & Physics**, Special Issue on Intelligent Data Analysis in Electromyography and Electroneurography, Vol. 21, No. 6/7, pp. 405-419, 1999.
- J.15 P.A. Panayiotou, D. Jenkins, C.S. Pattichis, F. Plimmer, *Computer Assisted Valuation: Multiple Regression Analysis in Cyprus*, **Journal of Tax Assessment & Administration**, Vol. 4, No. 2, pp. 27-51, 1999.
- J.16 P.A. Panayiotou, C.S. Pattichis, D. Jenkins, F. Plimmer, *A Modular Artificial Neural Network Valuation System*, **Journal of Tax Assessment & Administration**, Vol. 4, No. 3, pp. 17-29, 1999.
- J.17 C.S. Pattichis, I. Schofield, P. Fawcett, *A Morphological Analysis of the Macro Motor Unit Potential*, **Medical Engineering and Physics**, Vol. 21, No. 10, pp. 673-679, 1999.
- J.18 M.S. Pattichis, C.S. Pattichis, M. Avraam, A. Bovik, K. Kyriacou, *AM-FM Texture Segmentation in Electron Microscopic Muscle Imaging*, **IEEE Transactions on Medical Imaging**, Vol. 19, No. 12, pp. 1253-1258, 2000.
- J.19 F. Schnorrenberg, C.S. Pattichis, K. Kyriacou, C.N. Schizas, *Content-based Retrieval of Breast Cancer Biopsy Slides*, **Technology and Health Care**, Vol. 8, pp. 291-297, 2000.
- J.20 C. Michaelides, C.S. Pattichis, G. Kleovoulou, *Classification of Rainfall Variability Using Artificial Neural Networks*, **International Journal of Climatology**, Vol. 21, pp. 1401-1414, 2001.
- J.21 A. Pitsillides, G. Stylianou, C.S. Pattichis, A. Sekercioglu, T. Vassilakos, *Bandwidth Allocation for Virtual Paths (BAVP): Investigation of Performance of Classical Constrained and Genetic Algorithm Based Optimisation Techniques*, **Journal on Computer Communications**, Special Issue On Computational Intelligence In Telecommunications Networks, Vol. 25, No. 16, pp. 1443-1453, 2002.

- J.22 C.S. Pattichis, C.N. Schizas, A. Andreou, *Healthcare Telematic Applications in Cyprus*, **Methods of Information in Medicine**, Vol. 41, pp. 376-381, 2002.
- J.23 E. Kyriacou, P. Sotiris, A. Berler, M. Neophytou, A. Bourka, A. Georgoulas, A. Anagnostaki, D. Karayiannis, C. Schizas, C. Pattichis, A. Andreou, D. Koutsouris, *Multi-purpose HealthCare Telemedicine Systems with Mobile Communication Link Support*, **BioMedical Engineering OnLine**, [online], Vol. 2, No. 7, 2003, DOI 10.1186/1475-925x-2-7. Most accessed paper with more than 58000 hits.
- J.24 C.I. Christodoulou, C.S. Pattichis, M. Pantziaris, A. Nicolaidis, *Texture-Based Classification of Atherosclerotic Carotid Plaques*, **IEEE Transactions on Medical Imaging**, Vol. 22, No. 7, pp. 902-912, 2003.
- J.25 C.I. Christodoulou, S. Michaelides, C.S. Pattichis, *Multi-Feature Texture Analysis for the Classification of Clouds in Satellite Imagery*, **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 41, No. 11, pp. 2662- 2668, 2003.
- J.26 L. Eleftheriou, E. Zamba-Papanicolaou, M. Pantziaris, T. Kyriakides, S. Papacostas, P. Myrianthopoulou, C.S. Pattichis, I. Iliopoulos, C. Piperidou, *Click Evoked Neurogenic Vestibular Potentials (NVESTePs): A Method of Assessing the Function of the Vestibular System*, **Electromyography and Clinical Neurophysiology**, Vol. 43, pp. 399-408, 2003.
- J.27 L. Eleftheriou, E. Zamba-Papanicolaou, M. Pantziaris, K. Kleopas, T. Kyriakides, S. Papacostas, C.S. Pattichis, I. Iliopoulos, C. Piperidou, *Neurogenic Vestibular Potentials using a Tone Pip Auditory Stimulus*, **Electromyography and Clinical Neurophysiology**, Vol. 44, pp. 167-173, 2004.
- J.28 Y. Poirazi, C. Neokleous, C.S. Pattichis, C.N. Schizas, *A Neural Network Architecture Inspired From the Modular Organization of the Cerebral Cortex*, **IEEE Transactions on Neural Networks**, Vol. 15, No. 3, pp. 597-612, 2004.
- J.29 C. Loizou, C.S. Pattichis, C. Christodoulou, R. Istepanian, M. Pantzaris, A. Nicolaidis, *Comparative Evaluation of Despeckle Filtering in Ultrasound Imaging of the Carotid Artery*, **IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control**, Vol. 52, No. 10, pp. 1653-1669, 2005.
- J.30 S. K. Kakkos, A. N. Nicolaidis, E. Kyriacou, C. S. Pattichis, G. Geroulakos, *Effect of Zooming on Texture Features of Ultrasonic Images*, **Cardiovascular Ultrasound**, [online], Vol. 4, No. 1(8), 10 pages, 2006, Available at: <http://www.cardiovascularultrasound.com/content/4/1/8>.
- J.31 C. Loizou, C.S. Pattichis, M. Pantzaris, T. Tyllis, A. Nicolaidis, *Quality Evaluation in Ultrasound Imaging of the Carotid Artery Based on Normalization and Speckle Reduction Filtering*, **Medical & Biological Engineering & Computing**, Vol. 44, No. 8, pp. 405-413, 2006.
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- J.111 P. Bamides, K. Bliznakova, N. Pallikarakis, C.S. Pattichis, *Guest Editorial: Introduction to the Special Issue on "Advances in Biomedical Engineering and Computing: The MEDICON Conference Case" selected papers from MEDICON 2010*, **Computer Methods and Programs in Biomedicine**, Vol. 107, No. 1, pp. 1-3, 2012.
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<sup>1</sup> The invited editorial papers are review papers covering both achieved and emerging technologies, as well as a review of the papers included in the special issue.

- the 12th IEEE International Conference on BioInformatics and BioEngineering (BIBE 2012) and the 8th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2013)*, **International Journal of Monitoring and Surveillance Technologies Research**, vol. 1, No. 3, pp. 1-5, Dec. 2013.
- J.114 C.P. Loizou, M. Morega, E.C. Kyriakou, S. Pasca, S. Petroudi, P.D. Bamidis, M.S. Pattichis, C.S. Pattichis, Special Issue on *Biomedical Monitoring Technologies*, **International Journal of Monitoring and Surveillance Technologies Research**, Part 1, vol. 1, no. 3, pp. 1-81, & Part 2, Vol. 1, no. 4, pp. 1-79, 11 papers, 2013.
- J.115 M. Tsikankis, V.J. Promponas, N. Graf, M.D. Wang, S.T.C. Wong, N. Bourbakis, and C.S. Pattichis, *Guest Editorial: Computational Solutions to Large-Scale Data Management and Analysis in Translational and Personalized Medicine*, **IEEE Journal of Biomedical and Health Informatics**, Vol. 18, No. 3, pp. 720-721, 2014.
- J.116 E.C. Kyriakou, V.J. Promponas, I. Maglogiannis, C.N. Schizas, and C.S. Pattichis, *Editorial: Intelligent Biomedical Systems*, **International Journal on Artificial Intelligence Tools**, Vol. 23, No. 3, pp. 1402003-1, 4 pages, 2014.
- J.117 A. S. Panayides, E.C. Kyriacou, and C. S. Pattichis, *mHealth Special Issue Editorial*, **IET Healthcare Technology Letters**, Vol. 3, No. 3, pp. 151-152, 2016.
- J.118 A. Antoniadou, C.S. Pattichis, C.N. Schizas and P.D. Bamidis, *Introductory Editorial to the Special Issue on Systems Medicine for the Delivery of Better Healthcare Services*, **Health and Technology**, Vol. 7, No. 1, pp. 1-2, 2017.
- J.119 C.S. Pattichis, C Pitris, J Liang, Y Zhang, *Guest Editorial on the Special Issue on Integrating Informatics and Technology for Precision Medicine*, **IEEE Journal of Biomedical and Health Informatics**, Vol. 23, No. 1, pp. 12-13, 2019.
- J.120 C.S. Pattichis and A.S. Panayides, *Connected Health*, **Frontiers in Digital Health**, vol. 1, pp. 1, 2019, <https://doi.org/10.3389/fdgh.2019.00001>.

## II.2 Invited Book Contributions

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- BC.2 L. Middleton, C. Pattichis, M. Fredj, C. Schizas, *An Automated EMG Diagnostic System*, in **EMG 92 Acquisition Recentes en Electromyographie**, Ed. by J. Pouget, SOLAL editeurs, 111, rue Sainte Cécile, 13005 Marseille, pp. 110-123, 1992.
- BC.3 C. Schizas, C. Pattichis, L. Middleton, *Neural Networks, Genetic Algorithms, and K-Means Algorithm: In Search of Data Classification*, in **Combinations of Genetic Algorithms and Neural Networks**, Ed. by D. Whitley, and D. Schaffer, IEEE Computer Society Press, pp. 201-222, 1992.
- BC.4 C.S. Pattichis, C. Christodoulou, M.S. Pattichis, L.T. Middleton, *MUAP Signal Processing with Artificial Neural Networks*, in **Recent Advances in Clinical Neurophysiology**, Ed. by J. Kimura, H. Shibasaki, Elsevier Science B.V, pp. 373-377, 1996.
- BC.5 C.S. Pattichis, *Health Telematics Training Network (HEALTHNET)*, in **Health and Medical Informatics Education in Europe**, Ed. By J. Mantas, IOS Press, pp. 211-216, 2000.

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- BC.7 C.S. Pattichis, F. Schnorrenberg, C.N. Schizas, M. Pattichis, K. Kyriacou, *A Modular Neural Network System for the Analysis of Nuclei in Histopathological Sections*, in **Computational Intelligence Processing in Medical Diagnosis**, Ed. By M. Schmitt, H.N. Teodorescu, A. Jain, A. Jain, S. Jain, L.C. Jain, Physica-Verlag, pp. 291-322, 2002.
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- BC.16 C.S. Pattichis, F. Schnorrenberg, N. Tsapatsoulis, C.N. Schizas, M. Pattichis, K. Kyriacou, *A Biopsy Analysis Support System for the Detection and Classification of Breast Cancer Nuclei*, in **Emerging Technologies in Breast Imaging and Mammography**, Ed. by J.S. Suri, R. Rangayan, S. Laxminarayan, American Scientific Publishers, CA, USA, pp. 441-462, 2008.
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- BC.21 C. Loizou and C.S. Pattichis, *Despeckle Filtering of Ultrasound Images*, in **Atherosclerosis Disease Management**, Ed. By J.S. Suri, C. Kathuria, and F. Molinari, Springer, NY, USA, pp. 153-194, 2011, DOI: [10.1007/978-1-4419-7222-4\\_7](https://doi.org/10.1007/978-1-4419-7222-4_7).
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- BC.29 C.P. Loizou and C. S. Pattichis, *An overview of despeckle-filtering techniques*, in **Handbook of Speckle Filtering and Tracking in Cardiovascular Ultrasound Imaging and Video**, Ed. by C.P. Loizou, C.S. Pattichis and J. D'hooge, The Institution of Engineering and Technology (IET), Stevenage, UK, pp. 95-109, 2018.
- BC.30 C.P. Loizou and C. S. Pattichis, *Ultrasound carotid plaque video segmentation*, in **Handbook of Speckle Filtering and Tracking in Cardiovascular Ultrasound Imaging and Video**, Ed. by C.P. Loizou, C.S. Pattichis and J. D'hooge, The Institution of Engineering and Technology (IET), Stevenage, UK, pp. 425-443, 2018.

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- B.2 **Despeckle Filtering Algorithms and Software for Ultrasound Imaging and Video, Volume I: Algorithms and Software**, 2<sup>nd</sup> Edition, C.P. Loizou, and C.S. Pattichis, Morgan & Claypool Publishers, CA, USA, 2015.
- B.3 **Despeckle Filtering Algorithms and Software for Ultrasound Imaging and Video, Volume II: Selected Applications**, 2<sup>nd</sup> Edition, C.P. Loizou, and C.S. Pattichis, Morgan & Claypool Publishers, CA, USA, 2015.

### II.4 Editorial of Books

1. **M-Health: Emerging Mobile Health Systems**, Ed. by R.H. Istepanian, S. Laxminarayan, C.S. Pattichis, Springer, NY, USA, 2006.
2. **Ultrasound and Carotid Bifurcation Atherosclerosis**, Ed. by A. Nicolaides, K.W. Beach, E. Kyriakou, and C.S. Pattichis, Springer, London, UK, 2012. (This volume consists of 35 chapters organised under the following four sections: Section 1 *Ultrasound Image Processing and Analysis*, Section 2 *Early Atherosclerosis*, Section 3 *Late Atherosclerosis*, and Section 4 *Potential Clinical Applications*.)
3. **Handbook of Speckle Filtering and Tracking in Cardiovascular Ultrasound Imaging and Video**, Ed. by C.P. Loizou, C.S. Pattichis and J. D'hooge, The Institution of Engineering and Technology (IET), Stevenage, UK, 2018. 704 pages. ((This volume consists of 31 chapters organised under the following four sections: Section 1 *Introduction to Speckle Noise in Ultrasound Imaging and Video*, Section 2 *Speckle Filtering*, Section 3 *Speckle Tracking*, and Section 4 *Selected Applications*.)

### II.5 Editorial of Sections in Books

- EBS.1 C.S. Pattichis, R. Istepanian, S. Laxminarayan, Section Editors, *Introduction to Mobile E-Health Systems*, in **M-Health: Emerging Mobile Health Systems**, Ed. by Robert H. Istepanian, Swamy Laxminarayan, Constantinos S. Pattichis, Springer, NY, USA, 2006.

### II.6 Editorial of Journal Special Issues

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- EJS.5 D. Fotiadis, C.S. Pattichis, Guest Editors, *Special Issue on Biomedical Informatics*, **IEEE Transactions on Information Technology in Biomedicine**, Vol. 13, No. 4, pp. 415-457, 5 papers in this issue and 5 papers in previous issues, 2009.
- EJS.6 C.S. Pattichis, C.N. Schizas, M.S. Pattichis, E. Micheli-Tzanakou, E. Kyriakou, D. Fotiadis, *Special Issue on, Computational Intelligence in Medical Systems*, **IEEE Transactions on Information Technology in Biomedicine**, Vol. 13, No. 5, pp. 667-733, 6 papers in this issue and 10 papers in previous issues, 2009.
- EJS.7 G. Kontaxakis, N. Bourbakis, K.S. Nikiata, C.S. Pattichis, *Special Issue on Biomedical Image Technologies and Methods*, **Computerized Medical Imaging and Graphics**, vol. 34, pp 415-534, 13 papers, 2010.
- EJS.8 C.S. Pattichis, C.N. Schizas, E. Kyriakou, D. Fotiadis, M.S. Pattichis, P.D. Bamides, *Special Issue on Citizen Centered e-Health Systems in a Global Healthcare Environment: Selected Papers From ITAB 2009*, **IEEE Transactions on Information Technology in Biomedicine**, Vol. 15, No. 1, pp. 3-170, 19 papers, 2011.
- EJS.9 C.S. Pattichis, E. Kyriakou, M.S. Pattichis, P. Bamides, C. Christodoulou, C. Pitris, G. Mitsis, *Special Issue on Biomedical Signal Processing and Analysis*, **Biomedical Signal Processing and Control**, Vol. 6, No. 3, pp. 217-336, 14 papers, 2011.
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- EJS.12 C.P. Loizou, M. Morega, E.C. Kyriakou, S. Pasca, S. Petroudi, P.D. Bamidis, M.S. Pattichis, C.S. Pattichis, *Special Issue on Biomedical Monitoring Technologies*, **International Journal of Monitoring and Surveillance Technologies Research**, Part 1, vol. 1, no. 3, pp. 1-81, & Part 2, Vol. 1, no. 4, pp. 1-79, 11 papers, 2013.
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- EJS.16 A. Panayides, E.C. Kyriakou, and C.S. Pattichis, *Special Issue on mHealth – Emerging Mobile Health Systems and Services*, **Healthcare Technology Letters**, 10 papers, vol. 3 iss. 3, pp. 151-217, 2016.
- EJS.17 A. Antoniadou, C.S. Pattichis, C.N. Schizas and P.D. Bamidis, *Special Issue on Selected Papers from the XIV Mediterranean Conference on Medical and Biological Engineering and Computing 2016: MEDICON 2016 – Systems Medicine for the Delivery of Better Healthcare Services*, **Health and Technology**, 13 papers, 2017.
- EJS.18 J. Liang, S. Redmond, C.S. Pattichis, *Special Issue on Selected Papers from IEEE BHI 2016*, **IEEE Journal of Biomedical and Health Informatics**, March, 2017.
- EJS.19 C.S. Pattichis, C. Pitris, Y.T. Zhang, J. Liang, *Special Issue on Integrating Informatics and Technology for Precision Medicine*, **IEEE Journal of Biomedical and Health Informatics**, vol. 23, pp. 12-80, 7 papers, Jan., 2019.

## II.7 Editorial of Conference Proceedings

- ECP.1 C. Pattichis, Editor, **Proceedings of the First Cyprus International Conference on Computer Applications to Engineering Systems**, pp. 1-333, 28 papers, Nicosia, July 1-2, 1991.
- ECP.2-3 A.G. Constantinides, V. Capellini, C.S. Pattichis, C.N. Schizas, Editors, **Proceedings of the International Conference on Digital Signal Processing and Second International Conference on Computer Applications to Engineering Systems**, Vol. 1 & 2, pp. 1-688, 100 papers, Nicosia, July 14-16, 1993.
- ECP.4-5 S. Spyrou, S. Christofides, C.S. Pattichis, E. Keravnou, C.N. Schizas, G. Christodoulides, Editors, **Proceedings of the International Conference on Medical Physics and Biomedical Engineering**, Vol. 1 & 2, pp. 1-574, 98 papers, Nicosia, May 5-7, 1994.
- ECP.6-7 V. Cappellini, A.G. Constantinides, J. Cornelis, C. Cowan, F. Harary, A. Katsaggelos, S. Kollias, S.K. Mitra, S.D. Nikolopoulos, T.Q. Nguyen, G.A. Papadopoulos, C.S. Pattichis, C.N. Schizas, A. Spanias, P.P. Vaidyanathan, A.N. Venetsanopoulos, Editors, **Proceedings of the International Conference on Digital Signal Processing**, Vol. 1: Special Sessions, pp. 1-421, 67 papers, Vol. 2: Regular Papers, pp. 422-967, 87 papers, Limassol, June 26-28, 1995.
- ECP.8 C.S. Pattichis, S. Christofides, C.N. Schizas, Editors, **CD-ROM Proceedings of the VIII Mediterranean Conference on Medical and Biological Engineering and Computing**, Medicon'98, 190 papers, 760 pages, Limassol, June 14-17, 1998.
- ECP.9 C. Economides, C.S. Pattichis, G. Maliotis, M. Papaconstantinou, N. Michaelides, C.N. Schizas, Editors, **Proceedings of the IEEE Region 8-10<sup>th</sup> Mediterranean Conference on Information Technology and Electrotechnology, Vol. I: Information Technology and Communication Networks**, pp. 1-440, 106 papers, Limassol, May 29-31, 2000. (papers published in IEEE Xplore).
- ECP.10 C.S. Pattichis, S. Panis, Editors, **Proceedings of the IEEE Region 8-10<sup>th</sup> Mediterranean Conference on Information Technology and Electrotechnology, Vol. II: Signal and Image Processing**, pp. 441-880, 108 papers, Limassol, May 29-31, 2000. (papers published in IEEE Xplore).
- ECP.11 S. Christofides, G. Christodoulides, R. Demetriadou, P. Kaplanis, C.S. Pattichis, S. Spyrou, Editors, **CD-ROM Proceedings of the II EFOMP Mediterranean Conference on Medical**

- Physics, The Analogue to Digital Migration of the Hospital Working Environment**, 41 papers, Limassol, April 28-30, 2004.
- ECP.12 D. Fotiadis, C.S. Pattichis, Editors, **CD-ROM Proceedings of the 5<sup>th</sup> International IEEE EMBS Special Topic Conference on Information Technology Applications in Biomedicine**, 138 papers, Ioannina, Greece, October 26-28, 2006. (papers published in IEEE Xplore).
- ECP.13 E. Kyriakou, C. Loizou, C. Christodoulou, P. Bamidis, V. Promponas, Y. Poirazi, C.N.Schizas, C.S. Pattichis, Editors, **CD-ROM Proceedings of the 9<sup>th</sup> International Conference on Information Technology and Applications in Biomedicine, ITAB 2009**, 182 papers, Larnaca, Cyprus, Nov. 5-7, 2009. (papers published in IEEE Xplore).
- ECP.14 C.S. Pattichis, et al. Editors, **CD-ROM Proceedings of the 4th International Symposium on Communications Control and Signal Processing ISCCSP 2010**, 160 papers, Limassol, Cyprus, March 3-5, 2010. (papers published in IEEE Xplore).
- ECP.15 E. Kyriacou, V. Promponas, C. Loizou, C.N. Schizas, C. S. Pattichis, Editors, **Proceedings of IEEE 12<sup>th</sup> International Conference on BioInformatics & BioEngineering BIBE 2012**, 134 papers, Nov. 11-13, 2012, Larnaca, Cyprus (papers published in IEEE Xplore).
- ECP.16 E Kyriacou, S Christofides, CS Pattichis, Editors, **IFMBE Proceedings XIV Mediterranean Conference on Medical and Biological Engineering and Computing 2016: MEDICON 2016**, March 31st-April 2nd 2016, Paphos, Cyprus, Vol. 57, Springer, 2016.
- ECP.17 E Kyriakides, E Kyriacou, G Ellinas, S Louca, C Mavromoustakis, D. Michael, V. Vassiliou, G. Hadjichristofi, J. Georgiou, C. Panayiotou, A. Paschalidou, C. Loizou, CS Pattichis, Editors, **Proceedings of the IEEE 18TH MEDITERRANEAN ELECTROMECHANICAL CONFERENCE MELECON 2016**, 186 papers, April 18-20, Lemesos, Cyprus 2016 (papers published in IEEE Xplore DOI: 10.1109/MELCON.2016.7495298).
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### III. RESEARCH GRANTS

#### Summary Numbers<sup>2</sup>

III.1 Ongoing Research funds for the period 2016-present	4,041,801 Euro
III.2 Research funds for the period 2011-2015	2,181,919 Euro
III.3 Research funds for the period 2006-2010	3,763,269 Euro
III.4 Research funds for the period 2001-2005	790,089 Euro
III.5 Research funds for the period 1996-2000	628,693 Euro
III.6 Research funds for the period 1986-1995	396,385 Euro
<b><u>TOTAL AMOUNT OF RESEARCH FUNDS MANAGED</u></b>	<b><u>11,802,156 Euro</u></b> <b><u>13,677,262 USD<sup>3</sup></u></b>

#### III.1 Ongoing Research Projects for the Period 2016-present

- F.1** *Chatbots Enhance personalised European Healthcare Curricula (CEPEH)*  
Co-Investigator  
EU Erasmus+  
Sep. 2019 – Aug. 2022  
Funding 314,685 Euro (RISE 92,310 Euro)
- F.2** *Integrated National eHealth Ecosystem (eHealth4U)*  
Co-PI  
Research Promotion Foundation, Cyprus  
Restart 2016-2020 – Integrated Projects  
Jul. 2019 – Jan. 2022  
Funding: 1,000,000 Euro (UCY 423,360 Euro)
- F.3** *Safe, Efficient and Integrated Indoor Robotic Fleet for Logistic Applications in Healthcare and Commercial Spaces (ENDORSE)*  
Co-Investigator  
H2020-MSCA-RISE-2018 (Marie Skłodowska-Curie Research and Innovation Staff Exchange)  
Oct. 2018 – Sep. 2021  
Funding: 1,122,400 Euro (UCY 110,400 Euro)
- F.4** *Stay on Track: a web platform to help with adhering to prescribed medication (Stay-On-Track)*  
Co-PI  
Research Promotion Foundation, Cyprus  
Programme: Social Innovation, SOCIALINNO/0617/0014  
Oct. 2018 – Sep. 2021

<sup>2</sup> Total project funding was used when computing summary research funds when PI or Co-PI.

<sup>3</sup> The July 23rd, 2020 Euro to USD rate was used.

Funding: 100,000 Euro

**F.5 *Adaptive Video Control for Real-time Mobile Health Systems and Services (ACTRESS)***

Co-PI

Research Promotion Foundation, Cyprus

Restart 2016-2020

Sept. 2018 – Aug. 2020

Funding: 160,000 Euro (UCY 30,000 Euro)

**F.6 *Co-creation of Virtual Reality re-usable e-resource for European Healthcare Education (CoViRR)***

Co-Investigator

EU Erasmus+

Sep. 2018 – Aug. 2021

Funding 314,685 Euro (RISE 78,100 Euro)

**F.7 *Research centre on Interactive media, Smart systems and Emerging technologies (RISE)***

Co-Investigator (Co-Leader MRG 7 Smart, Ubiquitous, and Participatory Technologies for Healthcare Innovation)

EU H2020-WIDESPREAD-01-2016-2017-Teaming Phase 2

Nov. 2017 – Oct. 2024

Funding: 14,999,790 Euro (416,000 Euro for MRG7) (UCY 463,271 Euro)

**F.8 *Cyprus Electronic Exchange of Social Security***

PI

EU Innovation and Networks Executive Agency (INEA)

Department C - Connecting Europe Facility (CEF)

Unit C4 Energy & ICT [2017-CY-IA-0016]:

Mar. 2018 – Feb. 2020

Funding: 1,186,197 Euro (UCY 463,952 Euro)

**F.9 *Integrated Precision Medicine Technologies Research Centre of Excellence (IPMT)***

PI

EU H2020-WIDESPREAD-04-2017-Teaming Phase 1

Sept. 2017 – Aug. 2018

Funding: 399,999 Euro (UCY 140,287 Euro)

**F.10 *Deployment of Generic Cross Border eHealth Services in Cyprus***

PI

EU Innovation and Networks Executive Agency (INEA)

Department C - Connecting Europe Facility (CEF)

Unit C4 Energy & ICT [2015-CY-IA-0095]:

Jan. 2017 – Dec. 2020

Funding: 593,356 Euro (UCY 445,017 Euro)

**F.11 *eHealth Eurocampus***

Co-Investigator

EU ERASMUS+ PROGRAMME



Strategic Partnerships - Key Action 2  
 AGREEMENT NUMBER 2016-1-FR01-KA203-023932  
 Sept. 2016 – Aug. 2019  
 Funding: 35,439 Euro

### III.2 Completed Research Projects for the Period 2011-2015

- F.12** *Future Internet Social and Technological Alignment Research (FI-STAR): Electronic Health Record Application Support Service Enablers (EHR-EN)*  
 Co-PI  
 EU FP7 THEME Future Internet ICT: 604691 [FI.ICT-2011.1.8]:  
 April 2014 – September 2015  
 Funding: 121,120 Euro
- F.13** *Future Education and Training in Computing: How to support learning at anytime anywhere*  
 Co-PI  
 EU Lifelong Learning Programme: 539461-LLP-1-2013-1-BG-ERASMUS-ENW  
 November 2013 – October 2015  
 Funding: 12,000 Euro
- F.14** *New e-Health Services For The European Reference Network on rare anaemias (eEnerca)*  
 Co-Investigator  
 EU EAHC Health Program - The executive agency for Health and Consumers, Jan. 2014 – Sept. 2016, Funding 166,524 Euro
- F.15** *Development of a Breast Cancer Density Specific Computer Aided Detection System*  
 Co-PI  
 Research Promotion Foundation, Cyprus  
 Program for Research and Technological Development 2009-2010  
 February 2013 – February 2015  
 Funding: 139,700 Euro
- F.16** *Investigation of Type 2 Diabetes susceptibility loci in the Cypriot population*  
 Co-Investigator  
 Research Promotion Foundation, Cyprus  
 Program for Research and Technological Development 2009-2010  
 Sept. 2010 – Sept. 2013  
 Funding: 139,700 Euro (University of Cyprus budget: 20,000 Euro)
- F.17** *A Next-Generation, Secure Linked Data Medical Information Space for Semantically-Interconnecting Electronic Health Records and Clinical Trials Systems Advancing Patients Safety in Clinical Research (Linked2Safety)*  
 Co-Investigator  
 FP7-ICT-2011-7  
 Oct. 2011-Sept. 2014  
 Funding: 560,600 Euro
- F.18** *A Social Collaborative Working Space Semantically Interlinking Biomedical Researchers, Knowledge and Data for the Design and Execution of in-silico Models and Experiments in Cancer Chemoprevention (GRANATUM)*  
 Co-Investigator  
 EU FP7 ICT-2009.5.3: Virtual Physiological Human  
 Feb. 2011-Jul. 2013

Funding: 330,000 Euro

**F.19 *Long Lasting Memories***

Co-Investigator

EU FP7 ICT PSP Theme : ICT for ageing well with cognitive problems, combining assistive and independent living technologies

Apr. 2010-Nov. 2011

Funding: 349,590 Euro

**F.20 *Multi-type Content Repurposing and Sharing in Medical Education (mEducator)***

Co-Investigator

EU FP7 eContentplus Programme

Best Practice Network

May 2009-Apr. 2012

Funding: 281,250 Euro

**F.21 *Collaborative Research: Design, Implementation and Dissemination of Multidisciplinary online Java Digital Signal Processing (J-DSP)***

Co-Investigator

NSF, USA (multidisciplinary CCLI phase 3)

August 2008 – August 2013

Funding: 11,380 Euro

**F.22 *Quantitative and Qualitative Analysis of Brain White Matter Lesions in Multiple Sclerosis Subjects***

Co-Investigator

Research Promotion Foundation, Cyprus

Program for Research and Technological Development 2008

December 2008 – January 2011

Funding: 129,775 Euro

**F.23 *Real time Wireless Transmission of Medical Ultrasound Video***

Principal Investigator

Research Promotion Foundation, Cyprus

Program for Research and Technological Development 2008

December 2008 – November 2010

Funding: 59,980 Euro

**III.3 Completed Research Projects for the Period 2006-2010**

**F.24 *A Computer Aided Diagnostic tool in Gynaecological Endoscopy (CAD\_Gen)***

Co-Principal Investigator

Ministry of Commerce and Industry, Cyprus

Call for High Technology and Innovative Incubator Companies

May 2008 – Oct. 2010

Funding: 224,525 Euro

**F.25 *Mobile and Robotised Telemedicine for Emergency Vehicle (MARTE-III)***

Principal Investigator

Research Promotion Foundation, Cyprus

Program for Bilateral Cooperation: Cyprus-France 2007-2009

May 2008 – April 2010

Funding: 12,520 Euro

- F.26** *LifeQ*  
Co-Investigator  
Ministry of Commerce and Industry, Cyprus  
Call for High Technology and Innovative Incubator Companies  
May 2007 – April 2009  
Funding: 224,525 Euro
- F.27** *Investigating Disease Associated Gene-Gene Interactions: A Distributed Complete two SNP Interaction Analyses Framework*  
Principal Investigator  
Glaxo Smith Klime, UK  
December 2007 – November 2009  
Funding: 98,900 Euro
- F.28** *A Mediterranean network for Higher and Continuing Medical Education Resources (WideMEDnet)*  
Principal Investigator  
EU European Regional Development Fund  
INTERREG III B Archimed  
November 2008 – December 2008  
Funding: 481,318 Euro (for the University of Cyprus: 158,242 Euro)
- F.29** *Wireless Microsensors for the Detection of Cardiac Diseases*  
Principal Investigator  
Research Promotion Foundation, Cyprus  
Program for Research and Technological Development 2005-2007  
December 2006 – December 2008  
Funding: 183,320 Euro
- F.30** *Multimodal Biometric Security System*  
Co-Investigator  
Research Promotion Foundation, Cyprus  
Program for Research and Technological Development 2005-2007  
December 2006 – December 2008  
Funding: 59,210 Euro
- F.31** *A Mediterranean Research and Higher Education Intranet in Medical and Biological Sciences (IntraMEDnet)*  
Principal Investigator  
EU European Regional Development Fund  
INTERREG III B Archimed  
June 2006 – November 2008  
Funding: 1,233,940 Euro (for the University of Cyprus 340,708Euro)
- F.32** *An INTEgrated broadband telecommunication pilot teleservices-platform for improving health care provision in the Region of MEDiterranean*  
Co-Investigator  
EU European Regional Development Fund  
INTERREG III B Archimed  
June 2006 – March 2007  
Funding: 197,388 Euro
- F.33** *East Mediterranean Cohesion on Information and Telecommunications*  
Co-Investigator  
EU European Regional Development Fund

INTERREG III B Archimed  
June 2006 – March 2007  
Funding: 61,162 Euro

**F.34** *Accident Prediction Early Warning System*

Principal Investigator  
Research Promotion Foundation, Cyprus  
Program Expatriate Researchers 2003-2005  
September 2006 – August 2008  
Funding: 82,345 Euro

**F.35** *The Network Digital Video Surveillance Project*

Co-Investigator  
Ministry of Commerce and Industry, Cyprus  
Call for High Technology and Innovative Incubator Companies  
April 2006 – April 2008  
Funding: 224,525 Euro

**F.36** *Intraoperative Computer Assisted Tissue Image Analysis (CATIA)*

Co-Principal Investigator  
Research Promotion Foundation, Cyprus  
PENEK/KIN 2005, Program for the Financial Support of New Researchers  
March 2006 – February 2008  
Funding: 118,896 Euro

**F.37** *Video Segmentation and Motion Analysis of the Atherosclerotic Carotid Plaque in Ultrasound Imaging (VISEMA)*

Co-Principal Investigator  
Research Promotion Foundation, Cyprus  
Program Hosting an Expatriate Researcher  
February 2006 – January 2007  
Funding: 62,066 Euro

**F.38** *Surface EMG Diagnostic System Based on Statistical and Modelling*

Principal Investigator  
Research Promotion Foundation, Cyprus  
Program for Bilateral Cooperation: Cyprus-Slovenia 2003-2005  
December 2005 – November 2007  
Funding: 18,056 Euro

**F.39** *Advanced Telecommunication System for the Direct and Automated Notification of Volunteer Blood Donors*

Principal Scientific Investigator  
Research Promotion Foundation, Cyprus  
Program for Research and Technological Development 2005-2007  
September 2005 – August 2008  
Funding: 213,460 Euro

**F.40** *Development of Knowledge-based Visual Attention Models for Perceptual Video Coding*

Principal Investigator  
Research Promotion Foundation, Cyprus  
Program for Research and Technological Development 2003-2005  
September 2005 – August 2007  
Funding: 141,905 Euro

- F.41** *Network for Future Regional Health Care / Future Health*  
 Co-Investigator  
 European Regional Development Fund  
 INTERREG III C North zone  
 January 2004 – December 2006  
 Funding: 59,098 Euro
- F.42** *Network of Excellence on Virtual Reality and Virtual Environments Applications for Future Workspaces (INTUITION)*  
 Co-Investigator  
 European Commission, DG for Information Society Technologies  
 Integrating and Strengthening the ERA  
 October 2004 – September 2006  
 Funding: 17,530 Euro
- F.43** *Mobile and Robotised Telemedicine for Emergency Vehicle (MARTE)*  
 Principal Investigator  
 Research Promotion Foundation, Cyprus  
 Program for Bilateral Cooperation: Cyprus-France 2003-2005  
 September 2004 – August 2006  
 Funding: 10,520 Euro
- F.44** *SEEAchWeb: An Interactive Web-based Forum of Southeastern European Archaeology*  
 Co-Investigator  
 MINERVA Programme  
 October 2003 – September 2006  
 Funding: 38,060 Euro

#### III.4 Completed Research Projects for the Period 2001-2005

- F.45** *Exploratory Investigation in the Analysis of High Dimensional SNPs Data*  
 Principal Investigator  
 Glaxo Smith Klime, UK  
 December 2004 – December 2005  
 Funding: 90,640 Euro
- F.46** *Integrated System for the Evaluation of Ultrasound Imaging of the Carotid Artery (TALOS)*  
 Co-Principal Investigator  
 Research Promotion Foundation, Cyprus  
 Program for Research and Technological Development 2003-2005  
 January 2004 – December 2005  
 Funding: 87,440 Euro
- F.47** *Integrated System for the Digital Analysis of Endoscopic Imaging Macrobiosy for the Support of the Diagnosis of Gynaecological Cancer (IPPOKRATIS)*  
 Principal Investigator  
 Research Promotion Foundation, Cyprus  
 PENEK 2002, Program for the Financial Support of New Researchers  
 December 2002 – November 2004  
 Funding: 65,785 Euro
- F.48** *Electronic Journeys: A Case for The Cyprus Educational & Cultrural System (Avli tou Evagora)*  
 Co- Investigator

Ministry of Education and Culture, Cyprus Telecommunications  
 Authority, and University of Cyprus, Cyprus  
 September 2002 – December 2004  
 Funding: 280,645 Euro

**F.49** *Integrated System for the Support of the Diagnosis for the Risk of Stroke (IASIS)*

Principal Investigator  
 Research Promotion Foundation, Cyprus  
 5<sup>th</sup> Annual Program for the Financing of Research Projects  
 December 2002 – November 2005  
 Funding: 102,438 Euro

**F.50** *European Computing Education and Training (ECET)*

Co- Investigator  
 European Commission, DG for Education and Culture  
 Socrates Programme  
 October 2001 – September 2004  
 Funding: 17,546 Euro

**F.51** *Image Processing of Hyperspectral Satellite Imagery*

Co- Investigator  
 Ball Aerospace & Technologies Corp. Systems Engineering  
 Operations, USA  
 July 2001 – December 2001  
 Funding: 8,330 Euro

**F.52** *Quantitative Analysis of Chest Radiographs*

Co- Investigator  
 KESTREL Corporation, USA, Biomedical Imaging Division  
 National Institute for Occupational Safety and Health (NIOSH)  
 Grant 2R44 OHRRGM 03595.  
 January 2001 – August 2002  
 Funding: 28,510 Euro

**F.53** *Neurological and Genetic Networking of the two Communities (NeuroNet)*

Principal Investigator  
 United Nations Office for Project Services (UNOPs)  
 January 2001 - December 2002  
 Funding: 108,755 Euro

**III.5 Completed Research Projects for the Period 1996-2000**

**F.54** *Health Telematics Services Based on the WAP Protocol*

Co-Principal Investigator  
 Planning Bureau, Cyprus/General Secretariat of Research and  
 Technology, Greece  
 October 2000 – March 2002  
 Funding: 8,770 Euro

**F.55** *Remote Medical Education via Internet Enhanced Services  
 (REMEDIES LEONARDO EL/00/B/F/PP-1114019)*

Co- Investigator  
 European Commission, DG XXII  
 Leonardo Da Vinci Programme  
 January 2000 – Decemeber 2001

Funding: 17,540 Euro

**F.56 *Health Telematics***

Principal Investigator

University of New Mexico

High Performance Computing Education & Research Center

September 2000 – August 2001

Funding: 27,626 Euro

**F.57 *Software and Hardware for the Digital Systems Laboratory of UNM***

Co-Principal Investigator

Xilinx Corporation, USA

September 2000 – August 2001

Funding: 26,665 Euro

**F.58 *Continuing Professional Development Concerning General Practitioners (PROPRACTITION)***

Co- Investigator

European Commission, DG XXII

Leonardo Da Vinci Programme

December 1999 – June 2001

Funding: 13,156 Euro (Total budget 139,305 Euro)

**F.59 *Acquisition, Transmission and Compilation of Digital Sound and Image in Medical Practice (TELEPATHOLOGY)***

Co- Investigator

European Commission, DG XXII

Leonardo Da Vinci Programme

December 1999 – June 2001

Funding: 6,130 Euro (Total budget 136,555 Euro)

**F.60 *Gynecological Cancer Diagnostic Telepathology and Teleconsultation Network (TELEGYN)***

Principal Investigator

Middle East Cancer Consortium

June 1999 – May 2001

Funding: 25,385 Euro

**F.61 *Additional Funding for the project Gynecological Cancer Diagnostic Telepathology and Teleconsultation Network***

Co-Principal Investigator

Rotary International

May 2000

Funding: 21,000 Euro

**F.62 *Training Virtual Environment for Life-long Learning in Biomedicine (TRAVELLING)***

Co- Investigator

European Commission, DG XXII

Leonardo Da Vinci Programme

December 1998 – December 2000

Funding: 5,950 Euro (Total budget 195,495 Euro)

**F.63 *Cultural Journeys in the Information Society (CJIS)***

Co-Investigator

European Commission  
International Scientific Co-operation Initiative  
December 1998 – November 2000  
Funding: 39,378 Euro (Total budget 511,667 Euro)

**F.64** *An Integrated Portable Medical Device for Emergency Telemedicine – HC4027, EMERGENCY-112*

Co-Investigator  
European Commission, DG XIII  
4<sup>th</sup> Research & Development Framework Programme, Healthcare Telematics  
January 1998-December 2000  
Supported by the Government of Cyprus Planning Bureau  
Funding: 63,018 Euro (Total budget 1,092,212 Euro)

**F.65** *Mobile Unit for Health Care Provision via Telematic Support-HC1001*

Co-Investigator  
European Commission, DG XIII  
4<sup>th</sup> Research & Development Framework Programme, Healthcare Telematics  
January 1996-December 1998  
Supported by the Government of Cyprus, Planning Bureau  
Funding: 72,202 Euro (Total budget 1,925,585 Euro)

**F.66** *Health Telematics Training Network - HEALTHNET*

Principal Investigator  
European Commission, DG XXII  
Leonardo Da Vinci Programme  
December 1997 – December 2000  
Funding: 142,280 Euro

**F.67** *The Value of Non-Invasive Investigations in Identification of Individuals with Asymptomatic Carotid Stenosis at Risk of Stroke (ACSRS)*

Co-Investigator  
European Commission, DG XII  
Biomedical and Health Research 1994-1998  
January 1997-December 1999  
Supported by the Government of Cyprus, Planning Bureau  
Funding: 81,835 Euro (Total budget 350,100 Euro)

**F.68** *Electronic Roads in the Information Society (ERIS)*

Co-Investigator  
University of Cyprus  
January 1997-December 2000  
Funding: 43,775 Euro (Total budget 218,867 Euro)

**F.69** *Neurophysiology Equipment*

Co-Investigator  
REUTERS  
July 1997  
Funding: 5,255 Euro (Total budget 25,750 Euro)

**F.70** *The Development of Novel Techniques and Neural Network Models for Medical Imaging: Application in Breast Cancer Diagnosis*

Co-Principal Investigator  
Planning Bureau, Cyprus/General Secretariat of Research and Technology, Greece



January 96 - January 98  
Funding: 25,400 Euro

**F.71** *An Integrated System for Decision Support in Medicine*

Principal Investigator  
University of Cyprus  
January 96 - December 96  
Funding: 3,328 Euro

**III.6 Completed Research Projects for the Period 1986-1995**

**F.72** *Neurophysiology Equipment: Nicolet Viking IV Electromyograph*

Principal Investigator  
Nicolet Biomedical Inc., USA  
July 1995  
Funding: 26,278 Euro

**F.73** *Laser-Doppler Flowmetry for Microcirculation Monitoring: Advanced Signal Processing Aspects*

Principal Investigator  
University of Cyprus  
January 94 - December 95  
Funding: 2,627 Euro

**F.74** *Image Processing in Histopathology*

Principal Investigator  
Commission of the European Communities,  
International Scientific Cooperation Initiative  
Marie Curie Fellowship  
January 94 - December 94  
Funding: 32,585 Euro

**F.75** *Quantitative Immunohistochemical Assessment of Prognostic Factors in Carcinoma of the Breast*

Co-Investigator  
University of Cyprus  
September 93 - August 96  
Funding: 43,795 Euro

**F.76** *Computer Aided Diagnosis of Neuromuscular Disorders Based on EMG and Muscle Biopsy Findings*

Co-Investigator  
University of Cyprus  
September 93 - December 1994  
Funding: 3,505 Euro

**F.77** *Laser-Doppler Flowmetry for Microcirculation Monitoring*

Co-Investigator  
Commission of the European Communities, Directorate-General XII,  
Biomedical and Health Research 1991-1994  
January 1993 - December 1995

**F.78** *Computer Hardware*

Co-Principal Investigator  
NCR International

January 1990 - December 1991  
Funding: 28,482 Euro

- F.79** *Computer Hardware, Software, Peripherals, Data Acquisition Cards*  
Co-Principal Investigator  
From the Grant by the US Government in the context of its humanitarian aid programme to Cyprus through the UNHCR for the creation of the Cyprus Institute of Neurology and Genetics (CING)  
June 1990  
Funding: 17,516 Euro (CING was granted \$600,000 in 1990 for equipment, and \$1.8 million in 1991 for building its own premises. In addition, \$2.0 million have been allocated for 1992).
- F.80** *Computer Aided Diagnostic Systems in Medicine*  
Co-Principal Investigator  
Leventis Foundation  
January 1989 - December 1990  
Funding: 46,092 Euro
- F.81** *Computer Aided Analysis of Motor Unit Potentials on the Cadwell Excel Electromyograph*  
Principal Investigator  
Cadwell Labs, USA  
September 1989 - August 1991  
Funding: 78,835 Euro
- F.82** *Neurophysiology Equipment: Excel Electromyograph, and MES-10 Magnetic Stimulator*  
Principal Investigator  
Cadwell Labs, USA  
September 1989 - August 1991  
Funding: 87,592 Euro
- F.83** *Computer Hardware*  
Principal Investigator  
NCR International  
June 1986 - June 1989  
Funding: 8,058 Euro
- F.84** *Numerical Pattern Recognition in the Automatic Analysis of Motor Unit Potentials*  
Co-Investigator  
Muscular Dystrophy Group of Great Britain  
April 1986 - March 1988  
Funding: 21,020 Euro

## IV. DISSERTATION/THESES SUPERVISION

### Summary Numbers

#### IV.1 PhD Dissertations

A. Completed .....	16
B. In Progress.....	6
C. Member of Assessment Committee.....	33

#### IV.2 MSc Theses

A. Completed .....	52
B. In Progress.....	2

#### IV.1 PhD Dissertations

##### A. Completed<sup>4</sup>

1. ***Machine Learning for Privacy Preserving Data Publishing and the Analysis of Categorical Data in the Medical Domain***  
Aristos Aristodemou, Ph.D. 2020  
Department of Computer Science, University of Cyprus  
Supervised since September 2011
2. ***Multiscale AM-FM Models Based On Multiple Gabor Filter Families and Application in Medical Imaging***  
Ioannis Constantinou, Ph.D. 2017  
Department of Computer Science, University of Cyprus  
Supervised since January 2009
3. ***Real-Time Adaptation to Time-Varying Constraints for Reliable Mhealth Video Communications***  
Zinonas Antoniou, Ph.D. 2017  
Department of Computer Science, University of Cyprus  
Supervised since September 2010
4. ***Scientific Workflow Systems and Multi-Objective Evolutionary Algorithms for Life Sciences Informatics***  
Christos Kannas, Ph.D. 2017  
Department of Computer Science, University of Cyprus  
Supervised since September 2011
5. ***Mobile video tele-echography robotic platform over 4G-LTE***  
Sotiris Avgousti, Ph.D. 2016  
University of Orleans, France & Technical University of Cyprus, Cyprus  
Supervised jointly with Prof. P. Vиейres, Laboratory of Vision and Robotics (LVR), Assist. Prof. S. Voskarides, since January 2014
6. ***Computational Intelligence Algorithms to Identify Multivariate Genotype to Phenotype Interactions in High Dimensional SNP and Phenotype Datasets***  
Athos Antoniadis, Ph.D. 2011

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<sup>4</sup> PhD students that completed their studies with joint supervision were supervised with fellow colleagues in other Universities. These students carried out their work at the University of Cyprus. This is also documented by the co-authored publications.

- Department of Computer Science, University of Cyprus  
Supervised since September 2002
7. ***Diagnostically Resilient Encoding, Wireless Transmission, and Quality Assessment of Medical Video***  
Andreas Panayides, Ph.D. 2011  
Department of Computer Science, University of Cyprus  
Supervised since September 2005
  8. ***Data Mining in Medical Datasets***  
Minas Karaolis, Ph.D. 2010  
Department of Computer Science, University of Cyprus  
Supervised since September 2001  
Co-authored publications: J.43, C.79, C.98.
  9. ***Hybrid Multiobjective Evolutionary Algorithms in Small Molecule De Novo Design***  
Christodoulos Nickolaou, Ph.D. 2010  
Department of Computer Science, University of Cyprus  
Supervised since September 2004  
Co-authored publications: C.111.
  10. ***An Integrated Endoscopy Image Analysis System in the Assessment of Gynaecological Cancer***  
Marios Neophytou, Ph.D. 2007  
Department of Electrical and Computer Engineering, National Technical University of Athens, Greece  
Supervised jointly with Prof. D. Koutsouris  
Co-authored publications: J.23, JS.3, C.81, C.84, C.88, C.95, C.99, C.106.
  11. ***Wireless Health Information Systems***  
Sotos Voskarides, Ph.D. 2007  
Department of Electronic Engineering Brunel University, UK  
Supervised since June 2001, jointly with Prof. M. Hadjinicolaou  
Co-authored publications: J.41, BC.11, C.71, C.72, C.76, C.80, C.86.
  12. ***Ultrasound Image Analysis of the Carotid Artery***  
Christos Loizou, Ph.D. 2005  
School of Computing and Information Systems, Kingston University, UK  
Supervised jointly with Prof. Robert Istepanian.  
Co-authored publications: J.29, J.31, J.35, J.36, J.43, BC.15, BC.17, BC.18, C.73, C.74, C.77, C.85, C.87, C.91, C.94, C.102, C.108, C.109.
  13. ***Computer Aided Assessment of Certain Neuromuscular Disorders Based on Surface Electromyography***  
Kaplanis Prodromos, Ph.D. 2004  
Department of Medical Engineering and Physics, University of London, King's College School of Medicine and Dentistry, UK  
Supervised jointly with Prof. Colin Roberts, Head of the Department.  
Co-authored publications: JS.2, C.41, C.55, C.60, C.61, C.75, C.92, A.22, A.25, A.35.
  14. ***Neural Network Pattern Recognition in Biosignal Analysis***  
Christodoulos Christodoulou, Ph.D., 2000  
Department of Electronic Engineering, University of London, Queen Mary and Westfield College  
Supervised jointly with Dr. William Fincham (Senior Lecturer), and Dr John Bigham (Lecturer).

Co-authored publications: J.11, J.12, J.24, J.25, J.29, J.34, J.43, BC.4, BC.8, BC.10, BC.15, BC.18, C.30, C.33, C.35, C.41, C.42, C.45, C.49, C.50, C.51, C.53, C.54, C.62, C.63, C.69, C.73, C.74, C.78, C.82, C.89, C.90, C.92, C.93, C.96, C.98, C.100, C.101, C.104, C.110.

15. ***Immovable Property Taxation and the Development of an Artificial Neural Network Evaluation System for Residential Properties in Cyprus***  
Panayiotis Panayiotou, Ph.D., 1999  
Department of Built Environment, University of Glamorgan  
Supervised jointly with D. Jenkin (Lecturer) and F. Plimmer (Reader).  
Co-authored publications: J.15, J.16, C.58.
16. ***Virtual Search for Simple Non-Rigid Multi-Feature Objects in Histopathologic Image Data***  
Frank Theo Schnorrenberg, Ph.D., 1998  
Department of Computer Science, University of Groningen  
Supervised jointly with Prof. N. Petkov and Prof. C.N. Schizas.  
Co-authored publications: J.8, J.19, J.40, BC.7, BC.16, C.26, C.32, C.38, C.39.

## **B. In Progress**

17. ***Extracting Explainable Assessments of Alzheimer's disease via Machine Learning on brain MRI imaging data***  
Kleo Achilleos, M.Sc.  
Department of Computer Science, University of Cyprus  
Supervised since January 2013  
Supervised jointly with Prof. A. Kakas
18. ***Multi-scale AM-FM models in image and video processing and analysis***  
Kyriacos Constantinou, M.Sc.  
Department of Computer Science, University of Cyprus  
Supervised since January 2014
19. ***Quantitative Texture analysis on MRI imaging in the assessment of Alzheimer's disease***  
Stephanos Leandrou, M.Sc.  
City University, London, UK  
Supervised jointly with Prof. P. Kyriacou, Department of Biomedical Engineering, since May 2015
20. ***Explainable Argumentation-based framework for Explainable Machine Learning in Medical Systems***  
Nicoletta Prentza, M.Sc.  
Department of Computer Science, University of Cyprus  
Supervised since September 2017  
Supervised jointly with Prof. A. Kakas
21. ***Intelligent Biosignal Analysis***  
Antria Nicolaou, M.Sc.  
Department of Computer Science, University of Cyprus  
Supervised since September 2019
22. ***Virtual Reality Interventions in Pain Management***  
Melpo Pittara, M.Sc.  
University of Groningen, Netherlands  
Supervised jointly with Prof. N. Petkov, Department of Mathematics and Computing Science, since September 2019

**C. Member of PhD Assessment Committee**

1. University of Cyprus, Cyprus:	22
2. University of Groningen, Holland:	3
3. University of Gottenberg, Sweden:	1
4. City University, UK:	4
5. Kingston University, UK:	1
6. University of Zaragoza, Spain:	1
7. National Technical University of Athens, Greece:	1

**IV.2 MSc Theses****A. Completed**

1. *Spatial Memory, Visual Search and Attention*  
Marios Hadjaros, M. Sc. 2020
2. *A Multi-User VR EHR Platform*  
Elena Prodromou, M. Sc. 2020
3. *De Novo Metagenomics Clustering Platform*  
Christa Philippou, M. Sc. 2019
4. *Surgical Tool Tracking in Endoscopic Video*  
Pieris Hadjianastasi, M. Sc. 2018
5. *Semi-Automated Measurement of Ultrasonic Diaphragmatic Motion*  
Constantinos Chrysostomou, M. Sc. 2018
6. *Evaluation of Open Source Video Video Coders*  
Iacovos Rodotheou, M. Sc. 2017
7. *ePrescription and eDispensing based on the IHE Protocols*  
Georgia Rotsidou, M. Sc. 2017
8. *Content Based Carotid Ultrasound Image Retrieval System*  
Socratis Makarounas, M. Sc. 2017
9. *A Robotised Teleechography Ultrasound Video System*  
Argyris Iacovou, M. Sc. 2016  
Department of Computer Science, University of Cyprus
10. *Simulated Genetic Datasets*  
Panayiota Mytilineou, M. Sc. Thesis 2014  
Department of Computer Science, University of Cyprus
11. *epSOS Patient Summary Implementation in OpenEMR*  
Chrystalla Polyviou, M. Sc. Thesis 2014  
Department of Computer Science, University of Cyprus
12. *Genetic Aligning Algorithms for Genotype Identification*  
Panayiota Mytilineou, M. Sc. Thesis 2013  
Department of Computer Science, University of Cyprus

13. ***MRI Image Processing and Archiving***  
Elena Michael, M. Sc. Thesis 2013  
Department of Computer Science, University of Cyprus
14. ***Ultrasound Imaging Carotid Plaque Motion Estimation***  
Ioanna Herakleous, M. Sc. Thesis 2013  
Department of Computer Science, University of Cyprus
15. ***Surgical Tool Tracking in Hysteroscopy Video***  
Ioanna Charalambous, M. Sc. Thesis 2013  
Department of Computer Science, University of Cyprus
16. ***Rule Extraction Using Decision Trees in a Coronary Heart Events Disease Database***  
Katerina Tourtouri, M. Sc. Thesis 2013  
Department of Computer Science, University of Cyprus
17. ***Real-Time Emotion Recognition System for Monitoring the Elderly – Part 1***  
Chrystalla Miltiadou, M. Sc. Thesis 2013  
Department of Computer Science, University of Cyprus
18. ***Real-Time Emotion Recognition System for Monitoring the Elderly – Part 2***  
Nikolas Papachrysanthou, M. Sc. Thesis 2013  
Department of Computer Science, University of Cyprus
19. ***Real-Time Emotion Recognition System for Monitoring the Elderly – Part 3***  
Marios Georghiades, M. Sc. Thesis 2013  
Department of Computer Science, University of Cyprus
20. ***Telemonitoring System for Monitoring Post Cardiac Surgery Patients – ECG Analysis***  
Maria Efthymiou, M. Sc. Thesis 2012  
Department of Computer Science, University of Cyprus
21. ***Quantitative Monitoring of Iron Distribution in MRI in Thalassaemia***  
Kyriacos Kyriacou, M. Sc. Thesis 2012  
Department of Computer Science, University of Cyprus
22. ***Wireless Transmission of Ultrasound Video in Real Time in Mobile Devices***  
Eirini Eleftheriou, M. Sc. Thesis 2012  
Department of Computer Science, University of Cyprus
23. ***Telemonitoring System for Monitoring Post Cardiac Surgery Patients – Mobile Unit***  
Prokopis Prokopiou, M. Sc. Thesis 2012  
Department of Computer Science, University of Cyprus
24. ***A Telemonitoring System for Children with Cardiac Arrhythmias***  
Chimonidou Panagiota, M. Sc. Thesis 2010  
Department of Computer Science, University of Cyprus
25. ***A Parallel Implementation of a Multi-objective Evolutionary Algorithm***  
Christos Kannas, M. Sc. Thesis 2009  
Department of Computer Science, University of Cyprus
26. ***Rule Extraction in a Cardiovascular Disease Database Using Decision Trees***  
Demetra Xadjipanayi, M. Sc. Thesis 2009

- Department of Computer Science, University of Cyprus
27. ***Rule Extraction in a Cardiovascular Disease Database Using Association Rule Algorithms***  
Loukia Papaconstantinou, M. Sc. Thesis 2009  
Department of Computer Science, University of Cyprus
  28. ***Wireless Transmission of Video in Real Time***  
Aris Vlotomas, M. Sc. Thesis 2009  
Department of Computer Science, University of Cyprus
  29. ***A Data Mining System Applied in the Assessment of Children with Congenital Heart Disease***  
Maria Andreou, M. Sc. Thesis 2008  
Department of Computer Science, University of Cyprus
  30. ***A P2P Workflow Management System in e-Emergency***  
Vaso Pavlaki, M. Sc. Thesis 2008  
Department of Computer Science, University of Cyprus
  31. ***Content Based Carotid Ultrasound Image Retrieval System***  
Ioanna Ioakeim, M. Sc. Thesis 2008  
Department of Computer Science, University of Cyprus
  32. ***Data Preprocessing Algorithms***  
Demetris Papademetriou, M. Sc. Thesis 2007  
Department of Computer Science, University of Cyprus
  33. ***Rule Extraction Based on Genetic Algorithms***  
Katerina Neophytou, M. Sc. Thesis 2007  
Department of Computer Science, University of Cyprus
  34. ***Rule Extraction from Decision Trees in Medical Databases***  
Antonia Loizou, M. Sc. Thesis 2007  
Department of Computer Science, University of Cyprus
  35. ***A Data Mining System Applied in the National Database for Mammography – Part 1***  
Chrysanthos Chrysanthou, M. Sc. Thesis 2007  
Department of Computer Science, University of Cyprus
  36. ***A Data Mining System Applied in the National Database for Mammography – Part 2***  
George Ioakeim, M. Sc. Thesis 2007  
Department of Computer Science, University of Cyprus
  37. ***Application of Wearable Sensors for the Monitoring of Children with Cardiac Arrhythmias***  
Paraskeva Loukas, M. Sc. Thesis 2007  
Department of Computer Science, University of Cyprus
  38. ***AM-FM Analysis of SEMG***  
Emilios Hadjikrokopis, M. Sc. Thesis 2007  
Department of Computer Science, University of Cyprus
  39. ***A Neural Network Architecture Based on Dissimilar Neurons***  
Anna Pitsillidou, M. Sc. Thesis 2006  
Department of Computer Science, University of Cyprus
  40. ***A Data Mining System in the Assesment of Vine Products***



- Christiana Lazou, M. Sc. Thesis 2006  
Department of Computer Science, University of Cyprus
41. ***Morphological Analysis of Ultrasound Images of the Carotid Artery***  
Andreas Mavrommatis, M. Sc. Thesis 2006  
Department of Computer Science, University of Cyprus
42. ***SVM Models in Medical Diagnostic Systems***  
Stavros Panayiotou, M. Sc. Thesis 2006  
Department of Computer Science, University of Cyprus
43. ***3D Texture Analysis***  
Christos Andreou, M. Sc. Thesis 2006  
Department of Computer Science, University of Cyprus
44. ***CMT Blast Analysis***  
Alice Tutunzian, M. Sc. Thesis 2006  
Department of Computer Science, University of Cyprus
45. ***Content Based Image Retrieval in Ultrasound Imaging of the Carotid Artery***  
Spyros Spyrou, M. Sc. Thesis 2005  
Department of Computer Science, University of Cyprus
46. ***An Online Analytical Mining System Based on Association Rules in the Assessment of Stroke***  
Prokopios Savvides, M. Sc. Thesis 2005  
Department of Computer Science, University of Cyprus
47. ***Association Rule Extraction in a Breast Cancer Database***  
Zoi Xadgigeorgiou, M. Sc. Thesis 2005  
Department of Computer Science, University of Cyprus
48. ***Rule Extraction from Neural Networks***  
Maria Mikallou, M. Sc. Thesis 2005  
Department of Computer Science, University of Cyprus
49. ***Feature Selection Algorithms***  
Demetris Simeonides, M. Sc. Thesis 2004  
Department of Computer Science, University of Cyprus
50. ***An Algorithm for the Identification of the Genes Responsible for the Distal Hereditary Motor Neuropathy***  
Christothea Stylianidou, M. Sc. Thesis 2004  
Department of Computer Science, University of Cyprus
51. ***Model Based Decomposition of MUAPs into their Constituent SFEAPs***  
Maria Xyda, M. Phil. Thesis 2006  
Department of Informatics, University of Glamorgan, UK  
Supervised jointly with Dr. Paul Angel.
52. ***Autoregressive Spectral Modeling of Motor Unit Action Potentials***  
Elia Andreas, M. Phil. Thesis 1994  
Department of Electronic Engineering, University of London, Queen Mary and Westfield College  
Supervised jointly with Dr. William Fincham.

**B. In Progress**

1. *Personal Assistant in a Rare Disease*  
Stavroulla Kousparou, B. Sc. 2019  
Supervised since September 2019
2. *VR Gaming in the Management of Emotional Anxiety*  
Marios Christodoulou, B. A. 2019  
Supervised since July 2020

**IV.3 Undergraduate Diploma Projects**

More than 160 diploma projects supervised since 1993.

## V. TEACHING EXPERIENCE

### V.1 Courses Taught

#### A. University of Cyprus

**Artificial Intelligence** - CS604 (jointly with Y. Dimopoulos)  
Fall 2003, 2004

**Visual Computing** – CS607  
Fall 2008, 2009, 2010, 2011, 2012 (jointly with Y. Chrysanthou), 2013

**Digital Video Processing** – CS658  
Spring 2006

**Design with Embedded Systems** – CS659  
Spring 2006

**Data Mining**– CS662  
Spring 2002, 2003, 2004, 2005, 2007

**Computer Vision**- CS668  
Spring 2012, 2013 (jointly with Y. Chrysanthou)

**IoT: Programming and Applications**- CS428  
Fall 2019

**Digital Image Processing**– CS445  
Spring 2002, Fall 2003, 2005, 2006, 2011, 2012, 2015, 2016, 2017

**Microprocessor Systems**– CS423  
Fall 1997, Fall 1998

**Computational Learning Systems** – CS442  
Spring 1995

**Artificial Intelligence** – CS341  
Spring 2013

**Computer Organization and Assembly Programming** – CS221  
Fall 1993, Spring 1995, 1996, 1997, 1998, 1999, Fall 1999, 2003, 2004

**Digital Systems**– CS121  
Spring 1997, 1998, 1999, 2000, 2003, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2015, 2016, 2017,  
2019, 2020  
Fall 2013

**Unix and C** – CS230  
Fall 1995

**Introduction to Computer Science** – CS100  
Fall 1993, Spring 1994, Fall 1994, 1995, 1996

**Courses Developed:** CS607, CS604, CS658. CS662, CS668, CS121, CS221, CS423, CS442, CS445

**B. University of New Mexico****Computer Logic Design – EECE238**

Fall 2000 (two sections), Spring 2001, Fall 2001 (two sections)

**C. Intercollege****Computer Organization**

Fall 1986, Spring 1987, Fall 1988, Spring 1989

**D. Higher Technical Institute****Introduction to Expert Systems**

Fall 1988, 1989, 1990, Spring 1991

**Introduction to Compiler Design**

Spring 1989

**V.2 Short Courses Taught****Aristotle University of Thessaloniki, Medical School**

MSc course in Medical Informatics

DICOM Fundamentals (3hrs)

Fall 2017, 2018, 2019, 2020

**University of Patras, Faculty of Medicine, Laboratory of Medical Physics**

MSc course in Medical Informatics

Computational Intelligence in Medical Systems (10hrs) (jointly with C.N. Schizas)

April 8-April 9, 2011

**National and Kapodistrian University of Athens, Faculty of Nursing, Laboratory of Health Informatics**

MSc course in Health Informatics

Biosignal Analysis (30hrs) (jointly with C.N. Schizas)

August 31-September 5, 1998

**Cyprus Association of Medical Physics and Biomedical Engineering**

Digital Signal Processing Applications (20 hrs)

Funded by the Industrial Training Authority of Cyprus

December 18-20, 1995

**Intercollege**

Assembly Language Programming (40 hrs)

Funded by the Industrial Training Authority of Cyprus

May 15 - August 5, 1987

**V.3 Student Evaluations (Selected)**

<b>SEMESTER</b>	<b>COURSE</b>	<b>INSTRUCTOR SCORE OUT OF 5</b>
Spring 2006	CS 658 Digital Video Processing	4.30
Fall 2005	CS 445 Digital Image Processing	4.42
Fall 2005	CS 121 Digital Systems	2.91

Spring 2005	CS 662 Data Mining	4.76
Fall 2004	CS 604 Artificial Intelligence	4.31
Fall 2004	CS 221 Computer Organization and Assembly Programming	3.10
Spring 2004	CS 662 Data Mining	4.50
Fall 2003	CS 604 Artificial Intelligence	4.30
Fall 2003	CS 445 Digital Image Processing	4.70
Spring 2003	CS 662 Data Mining	4.75
Fall 2002	CS 445 Digital Image Processing	4.41
Spring 2002	CS 662 Data Mining	4.87
Spring 2002	CS 445 Digital Image Processing	4.96
Fall 2001	EECE238 Computer Logic Design <sup>+</sup>	4.50
Spring 2001	EECE238 Computer Logic Design <sup>+</sup>	4.46
Fall 2000	EECE238 Computer Logic Design <sup>+</sup>	4.42
Spring 2000	CS 121 Digital Systems	3.52
Fall 1999	CS 221 Computer Organization and Assembly Programming	4.58
Fall 1998	CS 221 Computer Organization and Assembly Programming	4.33

<sup>+</sup> Taught at the University of New Mexico

## VI. ADMINISTRATIVE AND COMMITTEE WORK EXPERIENCE

### VI.1 Department Committees

- Member of the Undergraduate Program Committee, Department of Computer Science, University of Cyprus, 2012 - .
- Elected Vice-Chairperson of the Department of Computer Science, University of Cyprus, Nov. 2006 – Apr. 2008.
- Cordinator of the Undergraduate Program Committee, Department of Computer Science, University of Cyprus, 2003 - 2008.
- Co-Cordinator of the Undergraduate Program Committee, Department of Computer Science, University of Cyprus, 1999, 2000, 2002.
- Cordinator of the Digital Logic and Microprocessor Systems Laboratory, Department of Computer Science, University of Cyprus, 1993 - 2000.
- Departmental Representative of the Socrates Programme, Department of Computer Science, University of Cyprus, 1998, 1999, 2000.
- Coordinator for the Organization of Seminars, Department of Computer Science, University of Cyprus, 1998, 1999.
- Coordinator for CS400-Diploma Project, Department of Computer Science, University of Cyprus, June 1997.

### VI.2 School Committees

- **Elected Dean of the School of Pure and Applied Sciences, University of Cyprus, May 2008 – May 2011.**
- Re-elected Memembr of the Board of the School of Pure and Applied Sciences, 2005-2006.
- Elected Memembr of the Board of the School of Pure and Applied Sciences, 2003-2004, 2015-2016.
- Member of the Committee for the Establishment of Health Sciences Research Unit, Department of Computer Science, University of Cyprus, April 1996.

### VI.3 University Committees

- Chairperson of the Senate Committee: Disciplinary Audit Committee (Academic), University of Cyprus, May 2008 – April 2011 & 2018 – 2020.
- Investigating Officer of the Senate Committee: Disciplinary Audit Committee (Academic), University of Cyprus, 2016-2017.
- Member of the Finance and Personnel Committee, University of Cyprus, May 2008 – May 2011.

- Chairperson of the Ad-hoc Senate Committee on Encouraging Students to be More Active in Social Matters, University of Cyprus, 2006 - 2007.
- Chairperson of the Senate Committee on Information Systems, University of Cyprus, 2003 - 2004.
- Member of the Committee for the Evaluation of the tender eUniversity, University of Cyprus, April 2004 – July 2004.
- Member of the Committee for the Evaluation of the tender Security Policy for the University of Cyprus, University of Cyprus, October 2003 – December 2003.
- Member of the Committee for the Evaluation of Computer Equipment, University of Cyprus, April 1998, September 1999.

#### **VI.4 Other Committees**

- Coordinator of the Curriculum Committee, Department of Computer Engineering, Intercollege, October 1988 - June 1990.
- Member of the Scientific Staff Training Committee of the Cyprus Institute of Neurology and Genetics, 1988-1992.
- Member of the Commission of the European Communities Biomedical Health Projects Exploratory Committee of the Cyprus Institute of Neurology and Genetics, 1988-1992.
- Project Leader of the Medical Records Computerization Committee of the Cyprus Institute of Neurology and Genetics, 1988-1992.
- **Member of the Board of Directos** of the Cyprus Institute of Neurology and Genetics, 2017-2020.

## VII. PROFESSIONAL ACTIVITIES

### VII.1 Conference Activities

#### A. Conference General Chair/Co-Chair

- A.1. **BHI 2021: IEEE Biomedical and Health Informatics 2021, Athens, Greece, May, 2021.**
- A.2. **CAIP 2021: Computer Analysis of Images and Patterns, Cyprus, Sept. 29 - Oct. 1, 2021.**
- A.3. MECBME 2018: IEEE 4th Middle East Conference on Biomedical Engineering, Gammarth – Tunis, Tunisia, 28-30 March 2018.
- A.4. MEDICON 2016: XIV Mediterranean Conference on Medical and Biological Engineering and Computing, Cyprus, March 31st-April 2nd, 2016.
- A.5. MELECON'2016: IEEE Region 18<sup>th</sup> Mediterranean Electrotechnical Conference, Limassol, April 18-20, 2016.
- A.6. BIBE 2012: 12th IEEE International Conference on Bioinformatics and Bioengineering, Larnaca, November 12-14, 2012.
- A.7. ITAB 2009: IEEE Information Technology Applications in Biomedicine, Larnaca, November 5-7, 2009.
- A.8. e-Health Forum: 4<sup>th</sup> Meeting of the Greek Forum on Health Telematics, Limassol, April 26, 2002.
- A.9. MELECON'2000: IEEE Region 8 Mediterranean Conference on Information Technology and Electrotechnology, Limassol, May 29-31, 2000 (in collaboration with IEEE and IEE).
- A.10. MEDICON'98: MEDIterranean CONference on Medical and Biological Engineering and Computing, Limassol, June 14-17, 1998 (in collaboration with the IFMBE (International Federation of Medical and Biological Engineering) and IEEE EMBS).
- A.11. DSP95: International Conference on Digital Signal Processing, Limassol, June 26-28, 1995 (in collaboration with IEE, EURASIP and IEEP ASSP).
- A.12. DSP&CAES93: International Conference on Digital Signal Processing and Second International Conference on Computer Applications to Engineering Systems, Nicosia, July 14-16, 1993 (in collaboration with IEE, EURASIP and IEEP ASSP).
- A.13. CAES91: First Cyprus International Conference on Computer Applications to Engineering Systems, Nicosia, July 1-2, 1991 (in collaboration with IEEE and IEE).

#### B. Conference Program Chair / Co-Chair

- B.1. IEEE Melecon 2020 – IEEE Region 8 Mediterranean Conference on Information Technology and Electrotechnology, Track Smart Health Care, 2020, Palermo, Italy, June 16-18, 2020.
- B.2. **BHI 2019: IEEE Biomedical and Health Informatics 2019, Chicago, Illinois, 19-22 May, 2019.**



**B.3. BHI 2018: IEEE Biomedical and Health Informatics 2018, Las Vegas, Nevada, 4-7 March, 2018.**

- B.4. BHI 2017 Rapid Fire Co-Chair: IEEE Biomedical and Health Informatics 2017, Orlando, Florida, 15-18 February, 2017.
- B.5. **CBMS 2017: IEEE Computer-Based Medical Systems, Thessaloniki, Greece, June 22-24, 2017.**
- B.6. ISCCSP 2010: 4<sup>th</sup> International Symposium on Communications, Control and Signal Processing, Limassol, March 3-5, 2010.
- B.7. ITAB 2006: IEEE Information Technology Applications in Biomedicine, Ioannina, October 26-28, 2006.

**C. Conference Session Chair (Selected)**

- C.1. Co-Chairperson: Mobile and Remote Healthcare System, Interational Biomedical Engineering Conference (jointly with uHealthcare 2014), Guangju, Korea, Nov. 20-22, 2014.
- C.2. Co-Chairperson: Data Mining and Machine Learning, IEEE International Conference on Biomedical & Health Informatics (BHI), Valencia, Spain, June 1-4, 2014.
- C.3. Co-Chairperson: Telehealth/Telemedicine, EMBS 2012, 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, California, USA, Aug. 28 – Sept. 1, 2012.
- C.4. Co-Chairperson: Towards Real Time Imaging, Image processing and Transmission, IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI 2012), Hong Kong and Shenzhen, China, January 2-7, 2012.
- C.5. Co-Organiser and Co-Chairperson: Cardiovascular Informatics (2 sessions), EMBS 2011, 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, Massachusetts, USA, Aug. 30 – Sept. 3, 2011.
- C.6. Co-Organiser and Co-Chairperson: eHealth and Telehealth, EMBS 2011, 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, Massachusetts, USA, Aug. 30 – Sept. 3, 2011.
- C.7. Co-Organiser and Co-Chairperson: eHealth and Telehealth, EMBS 2010, 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Buenos Aires, Argentina, Aug. 31 – Sept. 4, 2010.
- C.8. Organiser and Chairperson: mHealth, EMBS 2009, 31st Annual International conference of the IEEE Engineering in Medicine and Biology Society, 2-6, September, Minneapolis, Minnesota, 2009.
- C.9. Chairperson: CWSPI 2009, 2<sup>nd</sup> Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus, July 14, 2009.
- C.10. Track Chair of Medical Imaging, and Session Chair, BIBE 2008, 8th IEEE International Conference on BioInformatics and BioEngineering, October 8-10, Athens, Greece, 2008.
- C.11. Chairperson: CWSPI 2008, 1<sup>st</sup> Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus, July 14, 2008.

- C.12. Chairperson: ITAB 2007, Information Technology Applications in Biomedicine, November 8-11, Tokyo, Japan, 2007.
- C.13-14 Chairperson: Sessions Telemedicine I and II, [29th IEEE EMBS Annual International Conference](#) (EMBC07), August 23-26, Lyon, France, 2007.
- C.15. Chairperson: Summer School on Intelligent Systems, Organised in collaboration with European Thematic Network DOCTORAL EDUCATION IN COMPUTING (DEC), and the INTERREG III B Archimed Project: A Mediterranean Research and Higher Education Intranet in Medical and Biological Sciences, July, 2-6, Nicosia, Cyprus, 2007, [www.cs.ucy.ac.cy/sums](http://www.cs.ucy.ac.cy/sums).
- C.16. Chairperson: Medical Imaging Technology, Organised in collaboration with the INTERREG III B Archimed Project: A Mediterranean Research and Higher Education Intranet in Medical and Biological Sciences, November 9, Nicosia, Cyprus, 2007.
- C.17. Chairperson: Session Neural Control, Reinforcement Learning and Applications, International Conference on Artificial Neural Networks (ICANN), 10-14 September 2006, Athens, Greece.
- C.18. Chairperson: Session Biosignal Analysis, Medicon and Health Telematics 2004, X Mediterranean Conference on Medical and Biological Engineering, July 31 – August 5, Naples, Italy, 2004.
- C.19. Chairperson: Session PACS, II EFOMP Mediterranean Conference on Medical Physics, The Analogue to Digital Migration of the Hospital Working Environment, 28-30 April, 2004, Limassol, Cyprus.
- C.20. Chairperson: Session Artificial Intelligence in Medicine, The 1st MEDINF International Conference On Medical Informatics & Engineering MEDINF'2003, Craiova, Romania, 9-11 October 2003.
- C.21. Chairperson: Session Classification, CAIP'2003 Computer Analysis of Images and Patterns, Groningen, The Netherlands, August 25-27, 2003.
- C.22. Chairperson: 14th International Conference on Digital Signal Processing, July 1-3, 2002, Santorini, Greece, Session on Biomedical Signal and Image Processing I.
- C.23. Chairperson: Research-Statistics-Cancer Care, 6<sup>th</sup> Marianna Lordos Seminar, The Cyprus Anti – Cancer Society, Larnaca, February 8-10, 2002.
- C.24. Co-Organizer and Chairperson: Mobile Health Systems, 23<sup>rd</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Constantinoupolis, Turkey, October 25-28, 2001.
- C.25. Co-Organizer and Chairperson: Track 04: Medical Informatics and Biomedical Information Technology: Image Analysis in Vascular Ultrasound, World Congress on Medical Physics and Biomedical Engineering, Chicago, USA, July 23-28, 2000.
- C.26. Co-Organizer and Chairperson: Workshop Session 2C: Tele-Medicine, Re-Engineering Cyprus for the Digital Age: New Business and New Jobs, Nicosia, December 18-19, 1999.
- C.27. Biomedical Applications, ICASSP 99, Phoenix, USA, March 16-19, 1999.
- C.28. Organiser and Chairman: Health Telematics, EURO-MED NET 98 Conference, Nicosia, March 4-7, 1998.

- C.29. Track: Neural Networks for Signal Processing, 16th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Baltimore, Maryland, November 3-6, 1994.
- C.30. Mini-Symposium Co-organizer: Neural Networks in Medical Diagnosis, 16th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Baltimore, Maryland, November 3-6, 1994.
- C.31. Track: Neural Networks, 15th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, California, October 28-31, 1993.
- C.32. Track: Muscle and Nerve Muscular Systems, Session: Neuromuscular System Neural Activity, 14th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Paris, France, Oct. 29 - Nov. 1, 1992.
- C.33. Expert Systems, IX International Congress of Electromyography and Clinical Neurophysiology, Jerusalem, Israel, June 8-12, 1992.
- C.34. Organiser and Chairman: Imaging Techniques in Histopathology and Cytology, Third National Seminar of the Association of Medical Physics and Biomedical Engineering, Nicosia, Cyprus, May 23rd, 1992.

#### **D. Organizing Committee (Selected)**

- D.1. Mobihealth: 5th International Conference on Wireless Mobile Communications and Healthcare, London, UK, 14 - 16 October, 2015.
- D.2. International Biomedical Engineering Conference (jointly with uHealthcare 2014), Guangju, Korea, Nov. 20-22, 2014.
- D.3. BHI 2012: IEEE-EMBS International Conference on Biomedical and Health Informatics, Hong Kong and Shenzhen, China, January 2-7, 2012.
- D.4. EMBS 2011: 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, Massachusetts, USA, Aug. 30 – Sept. 3, 2011.
- D.5. EMBS 2010, 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Buenos Aires, Argentina, Aug. 31 – Sept. 4, 2010.
- D.6. PETRA 2009: 2nd International Conference on Pervasive Technologies Related to Assistive Environments conference, Corfu, Greece, June 9-12, 2009.
- D.7. ICANN 2009: 19th International Conference on Artificial Neural Networks<sup>[1]</sup><sub>SEP</sub>, 14-17 September, Limassol, Cyprus.
- D.8. ITAB 2008: 7th International IEEE EMBS Special Topic Conference on Information Technology Applications in Biomedicine ITAB, May 30-31, Shenzhen, China, 2008.
- D.9. BIBE 2008: 8th IEEE International Conference on Bioinformatics and BioEngineering, October 8-10, Athens, Greece, 2008.
- D.10. ITAB2007: Information Technology Applications in Biomedicine, November 8-11, Tokyo, Japan, 2007.

- D.11. CAIP2007: 12th International Conference on Computer Analysis of Images and Patterns, August 27th - August 29th, 2007, Vienna, Austria.
- D.12. CBMS2007: 20th IEEE International Symposium on Computer Based Medical Systems, Special Track on Technology Enhanced Learning in Medical Education, June 20-22, 2007, Slovenia.
- D.13. MEDICON'07: MEDiterranean CONFerence on Medical and Biological Engineering and Computing, 26-30 June 2007, Ljubljana, Slovenia.
- D.14. 16th International Conference on Artificial Neural Networks (ICANN), 10-14 September 2006, Athens, Greece.
- D.15. International Conference On Intelligent Systems and Computing: Theory and Applications (ISYC 2006), Ayia Napa, Cyprus, July 2006.
- D.16. 3rd IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI), 7-9 June, Athens, Greece, June 2006.
- D.17. Medicon and Health Telematics 2004, X Meditteranean Conference on Medical and Biological Engineering, July 31 – August 5, Naples, Italy, 2004.
- D.18. 12th IEEE Mediteranean Electrotechnical Conference MELECON 2004, to be held on May 9-12, 2004 in Dubrovnik, Croatia.
- D.19. II EFOMP Mediterranean Conference on Medical Physics, The Analogue to Digital Migration of the Hospital Working Environment, 28-30 April, 2004, Limassol, Cyprus.
- D.20. D.20 Ninth European Conference on Artificial Intelligence in Medicine, 18-22 October 2003, Protaras, Cyprus.
- D.21. The 1<sup>st</sup> MEDINF International Conference On Medical Informatics & Engineering MEDINF'2003, Craiova, Romania, 9-11 October 2003.
- D.22. CAIP'2003 (Computer Analysis of Images and Patterns) August 25-27, 2003, Groningen, The Netherlands.
- D.23. 4<sup>th</sup> International IEEE EMBS Special Topic Conference on Information Technology Applications in Biomedicine, 24-26 April, Birmingham, UK, 2003.
- D.24. Medical Informatics Europe – Special Topic Conference 2002: The e-volution of IT in the Health Care Systems, Nicosia, Cyprus, 8-10 March, 2002.
- D.25. HEALTH-NET-CEEC 2001: Informatics Tools to Restructure Health Care Services - First Meeting of the Central and Eastern European Countries, Targu Mures, Romania, April 26-27-28, 2001.
- D.26. MEDICON'01: MEDiterranean CONFerence on Medical and Biological Engineering and Computing, Pula, Croatia, June 12-15, 2001.
- D.27. Tele EEG, Cyprus Institute of Neurology and Genetics, Nicosia, October 2-3, 1998.
- D.28. Medical Informatics in Cyprus (Nicosia-Cultural Month 95), Nicosia, October 11, 1995.

- D.29. International Conference on Medical Physics & Biomedical Engineering, Nicosia, May 5-7, 1994.
- D.30. Creativity and Science in the Great Europe of Cultural Centres, Nicosia, July 16-17, 1993.
- D.31. Trends in Health Care Technology, 4th Annual National Seminar of the Cyprus Association of Medical Physics and Biomedical Engineering, Limassol, May 29th, 1993.

## VII.2 Reviewer For

### A. Journals

- **Frontiers Digital Health, Founding Specialty Section Editor on Connected Health (2020- ).**
- **IEEE Journal of Biomedical and Health Informatics, Associate Editor (2013- ).**
- **IEEE Transactions on Information Technology in Biomedicine, Associate Editor (2000-2012).**
- **IEEE Transactions on Neural Networks, Associate Editor (2005-2007).**
- IEEE Transactions on Signal Processing.
- IEEE Transactions on Biomedical Engineering.
- IEEE Engineering in Medicine & Biology Magazine.
- IEEE Transactions on Multimedia.
- IEEE Transactions on Image Processing.
- Annals of Operations Research.
- Artificial Intelligence in Medicine.
- Computer Based Medical Methods
- **Journal of Biomedical Signal Processing and Control, Member of Editorial Board (2008- ).**
- Journal of Systems Architecture The EURO MICRO Journal.
- Journal of Intelligent Systems.
- Journal of Electromyography and Kinesiology.
- Knowledge and Information Systems (KAIS).
- Medical and Biological Engineering and Computing.
- Medical Engineering & Physics.
- Technology and Health Care.
- HTI Review, 1989, 1990.

**B. Conferences (Selected)**

- Interational Biomedical Engineering Conference (jointly with uHealthcare 2014), Guangju, Korea, Nov. 20-22, 2014.
- 2013 Constantinides International Workshop on Singal Processing, CIWSP 2013, London, UK, Jan. 25, 2013.
- IEEE 12th International Conference on Bioinformatics and Bioengineering (BIBE), Larnaka, November 12-14, Cyprus, 2012.
- EMBS 2011, 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, Massachusetts, USA, Aug. 30 – Sept. 3, 2011.
- EMBS 2010, 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Buenos Aires, Argentina, Aug. 31 – Sept. 4, 2010.
- PETRA 2009: 2nd International Conference on PErvasive Technologies Related to Assistive Environments conference, Corfu, Greece, June 9-12, 2009.
- EMBS 2009: 31st Annual International conference of the IEEE Engineering in Medicine and Biology Society, 2-6, September, Minneapolis, Minnesota, 2009.
- ICANN 2009: 19th International Conference on Artificial Neural Networks, <sup>[1]</sup><sub>SEP</sub>14-17 September, Limassol, Cyprus.
- DSP 2009: 16th International Conference on Digital Signal Processing, Santorini, Greece, July 5-7, 2009
- AIAI 2009: 5th IFIP International Conference on Artificial Intelligence Applications & Innovations, 23-25 April, Thessaloniki, 2009.
- BIBE 2008: 8th IEEE International Conference on BioInformatics and BioEngineering, October 8-10, Athens, Greece, 2008.
- 30th Annual International conference of the IEEE engineering in Medicine and Biology Society, 20-24, August, Vancouver, Canada, 2008.
- CBMS 2008: 21th IEEE International Symposium on Computer-Based Medical Systems, June 17-19, University of Jyväskylä, Finland, 2008.
- ITAB 2008: 7th International IEEE EMBS Special Topic Conference on Information Technology Applications in Biomedicine ITAB, May 30-31, Shenzen, China, 2008.
- ITAB2007: Information Technology Applications in Biomedicine, November 8-11, Tokyo, Japan, 2007.
- CAIP2007: 12th International Conference on Computer Analysis of Images and Patterns, August 27th - August 29th, 2007, Vienna, Austria.
- CBMS2007: 20th IEEE International Symposium on Computer Based Medical Systems, Special Track on Technology Enhanced Learning in Medical Education, June 20-22, 2007, Slovenia.

- MEDICON'07: MEDiterranean CONference on Medical and Biological Engineering and Computing, 26-30 June 2007, Ljubljana, Slovenia.
- 16<sup>th</sup> International Conference on Artificial Neural Networks (ICANN), 10-14 September 2006, Athens, Greece.
- 3rd IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI), 7-9 June, Athens, Greece.
- Proceedings of the 3<sup>rd</sup> European Medical & Biological Engineering Conference of IFMBE (EMBEC 05), Prague, Czech Republic, 20-25 November 2005.
- Medicon and Health Telematics 2004, X Mediterranean Conference on Medical and Biological Engineering, July 31 – August 5, Naples, Italy, 2004.
- International Conference on Computer Systems and Technologies – CompSysTech'04, 17-18 June, Rousse, Boulgaria, 2004.
- 12th IEEE Mediteranean Electrotechnical Conference MELECON 2004, to be held on May 9-12, 2004 in Dubrovnik, Croatia.
- II EFOMP Mediterranean Conference on Medical Physics, The Analogue to Digital Migration of the Hospital Working Environment, 28-30 April, 2004, Limassol, Cyprus.
- Ninth European Conference on Artificial Intelligence in Medicine, 18-22 October 2003, Protaras, Cyprus.
- 1<sup>st</sup> MEDINF International Conference on Medical Informatics & Engineering, 12-15 October, Craiova, Romania, 2003.
- CAIP'2003 (Computer Analysis of Images and Patterns) April 2003, Groningen, The Netherlands.
- Medical Informatics Europe, Pola, France, 2003.
- 4<sup>th</sup> International IEEE EMBS Special Topic Conference on Information Technology Applications in Biomedicine, 24-26 April, Birmingham, UK, 2003.
- IEEE International Conference on Image Processing, ICIP 2001, October 7-10, Thessaloniki, Greece.
- MEDiterranean CONference on Medical and Biological Engineering and Computing, Pula, Croatia, June 12-15, 2001.
- World Congress on Medical Physics and Biomedical Engineering, Chicago, USA, July 23-28, 2000.
- European Signal Processing Conference, Rhodes, Hellas, September 14-17, 1998.
- IEEE Region 8 Students Paper Contest 1995.
- 15th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, California, October 28-31, 1993.

- IX International Congress of Electromyography and Clinical Neurophysiology, Jerusalem, Israel, June 8-12, 1992.
- V Congress of the International Society of Greek Neuroscientists, Limassol, Sept. 1988.
- IIIrd International Conference on Quantitative EMG, Nicosia, June 1988.

### **VII.3 Professional Societies Activities**

**A. Fellow of the International Academy of Medical and Biological Engineering (IAMBE), (elected in June 4, 2018) in recognition of outstanding contributions to the field of Medical and Biological Engineering.**

**B. Fellow of the IEEE (elected in 4<sup>th</sup> Jun. 2018) for contributions to the development of medical diagnostic and mobile health systems.**

- Member of the Computer, Acoustics Speech and Signal Processing (ASSP), Engineering in Medicine and Biology, and Neural Networks Societies.
- **IEEE EMBS Distinguished Lecturer (2013-2014).**
- **IEEE EMBS Technical Committee on Information Technology for Health (2011- ).**

**C. Fellow of the European Alliance for Medical and Biological Engineering & Science (EAMBES) (elected in 12<sup>th</sup> Mar. 2018) in recognition of distinguished leadership and important contributions to research and advocacy of Medical and Biological Engineering & Science.**

- Elected Member of the Council, Councilor on Education, Mar. 2017 – Mar. 2019.
- Member of the Council, Councilor on Conferences and Publications, Mar. 2019 – Mar. 2021.
- Member of the Fellows Committee, Mar. 2019 – Mar. 2021.

**D. Fellow of Institute of Engineering Technology (FIET), (elected in 22<sup>nd</sup> Feb. 2011) Original research resulting in international recognition.**

**E. IEEE Cyprus Section**

- President 1998-2000
- Vice-President 1996-1997
- Secretary 1994-1995, 2002-2004
- Founding member of the Section

**F. Cyprus Association of Medical Physics and Biomedical Engineering**

- President 1996-1998
- Vice-President 1994-1996
- Secretary 1992-1994, 2002-2004, 2006-2008, 2008-2010
- Member of the council 2004-2006, 2006-2008, 2008-2010
- Founding member of the Association

**G. Cyprus Society of Medical Informatics**

- President 2012-2015, 2015-2016
- Secretary 2004-2006, 2006-2008, 2008-2012
- Council member 2002-2004



#### **H. ProRec-CY (mission: to promote the widespread use of high quality electronic health record (EHR) systems in Cyprus)**

- Secretary 2006-
- Founding member

#### **I. Member**

- European Society for Engineering and Medicine
- Greek Artificial Intelligence Society – Honorary Member
- Cyprus Computer Society
- Technical Chamber of Cyprus

### **VII.4 Project Evaluation, Reviewing, and Consulting**

#### **A. Experience in Project Evaluation**

1. **General Secretariat of Research and Technology, Greece**  
Annual Program for the Financing of Research Projects  
Project Evaluator  
June 1999
2. **General Secretariat of Research and Technology, Greece**  
ATHLETICS CALL, Research and Development Projects  
Project Evaluator  
January 2003
3. **Ministry of Commerce and Industry, Cyprus**  
Call for High Technology and Innovative Incubator Companies  
Project Evaluator  
January 2003, June 2003, October 2004, June 2006, December 2006
4. **Ireland Health Research Board**  
Project Evaluator – Health Telematics  
March 2005
5. **EU FP6 Information Society Technologies**  
Call for ICT for Health Nov. 2004  
Project Evaluator – Directorate H - ICT For Citizens and Businesses Unit H1 - ICT for Health  
April 2005
6. **Slovenian Research Academy**  
Project Evaluator – General Applied Research Project  
October 2007
7. **Ministry of Education, Lifelong Learning and Religious Affairs, Greece**  
Project Evaluator – Archimedes Research Projects Call  
January (1st call) and October (2<sup>nd</sup> call) 2011
8. **Ministry of Education, Lifelong Learning and Religious Affairs, Greece**  
Project Evaluator – Thalys Research Projects Call  
February 2011, October 2011

9. **National Science Foundation, USA**  
Project Evaluator – eHealth and Well Being Call  
March 2011
10. **Czech Science Foundation, Czech Republic**  
Project Evaluator  
February 2011
11. **Ambient Assisted Living (AAL), Programme 2014, EU**  
Project Evaluator & Rapporteur  
August 2014
12. **Slovenian Research Agency, Slovenia**  
Project Evaluator  
September 2014
13. **Canadian Institute of Health Research, Canada**  
Project Evaluator  
December 2015
14. **Impulse Council, KU Leuven, Netherlands**  
Project Evaluator  
December 2015
15. **Ambient Assisted Living (AAL), Programme 2016, EU**  
Project Evaluator  
June 2016
16. **European Commission Horizon 2020 Work Programme 2018-2020**  
Call for ICT-49-2020 – Innovation Actions (IA), DT-ICT-12 – Innovation Actions (IA)  
Project Evaluator – DG CNECT – Communications Networks, Content and Technology, Unit A1 –  
Robotics & Artificial Intelligence  
July – August 2020

## **B. Consulting**

1. Ministry of Health, Cyprus  
Expression of Interest (EOI) For The Supply, Installation And Commissioning Of A Turnkey Solution For An Integrated Health Care Information System For The Ministry Of Health Of The Government of the Republic Of Cyprus  
Consultant  
November 2003 - December 2004
2. Ministry of Education, Cyprus  
Member of Several Technical Committees for the Evaluation of Computer Science Courses at Institutes of Higher Education in Cyprus
3. Hellenic Quality Assurance Agency of Higher Education (HQAA)  
Member of the External Evaluation process of the Department of Informatics & Telecommunications of the National & Kapodistrian University of Athens  
9/5/2011 to 14/5/2011.  
Member of the External Evaluation process of the Department of Computer Science and Biomedical Informatics of the University of Central Greece  
31/10/2011 to 5/11/2011.

4. Health Insurance Organisation, Cyprus  
Tender OAY 02/2007 “Development, implementation, operation and support of a total solution for the information technology system and other business processes of the National Health Insurance System in Cyprus”  
Consultant  
January 2016 – June 2016
  
5. Hellenic Authority of Higher Education (HAHE)  
Member of the External Evaluation & Accreditation Panel of the Undergraduate Study Programme of Computer Science and Biomedical Informatics of the University of Thessaly, July 6th, 2020 – July 11th, 2020

## VIII. INVITED SEMINARS AND PRESENTATIONS

### Summary Numbers

#### Invited Seminars and Presentations: 70

1. *Ultrasound Video Analysis of Carotid Plaque Morphology for the Assessment of Stroke*, Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, USA, May 24, 2019.
2. *Quantitative Imaging (Radiogenomics) for Precision Medicine*, Bernoulli Institute, Colloquia Computer Science, University of Groningen, Netherlands, June 22nd, 2018. (jointly with Dr A. Panayides).
3. *Quantitative Imaging for Precision Medicine*, EAMBES-Fellows Meeting in London, Biomedical Engineering Challenges in Europe, City University of London, UK, March 12th and 13th, 2018.
4. *Quantitative Imaging for Precision Medicine*, SENSIP Centre, School of Engineering, Arizona State University, Phoenix, AZ, USA, March 2nd, 2018. (jointly with Dr A. Panayides).
5. *Quantitative Imaging for Precision Medicine*, Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, USA, March 1st, 2018. (jointly with Dr A. Panayides).
6. *Cardiovascular Informatics: Predicting the risk of stroke based on ultrasound image analysis of the atherosclerotic carotid plaque*, 9<sup>th</sup> International Conference on Computational Collective Intelligence (ICCCI 2017), Nicosia, Cyprus, Sept. 27-29, 2017.
7. *eHealth: Big Data Analytics and Precision Medicine*, Policy Dialogue on Health System and Public Health Reform in Cyprus, Health in the 21st Century, Nicosia, Cyprus, 26-27 September 2017.
8. *Cardiovascular Informatics: Predicting the risk of stroke based on ultrasound image analysis of the atherosclerotic carotid plaque*, 11th IEEE-EMBS International Summer School and Symposium on Medical Devices and Biosensors (MDBS 2017), Southern University of Science and Technology, Shenzhen, China July 08-10, 2017.
9. *An Overview of M-Health Video Communication Systems*, University of Groningen, Netherlands, Dec. 13<sup>th</sup>, 2016. (jointly with Dr A. Panayides).
10. *Cardiovascular Informatics: Predicting the risk of stroke based on ultrasound image analysis of the atherosclerotic carotid plaque*, University of Groningen, Netherlands, Sept. 21<sup>st</sup>, 2015.
11. *Cardiovascular Informatics: Predicting the risk of stroke based on ultrasound image analysis of the atherosclerotic carotid plaque*, Presentation made at the workshop on: Advances and Challenges in Cardiovascular Ultrasound, Organised by S. Golemati and K.S. Nikita, **37<sup>th</sup> Annual Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)**, Milano, Italy, Aug. 25 – 29, 2015.
12. *An Overview of M-Health Video Communication Systems*, 11th. National & International Conference of the Hellenic Society for Systemic Studies (2015 HSSS): Systemics and Health Care, Athens, Greece, July 10-12, 2015.

13. *An Overview of M-Health Video Communication Systems*, IEEE EMBS Distinguished Lecture, IEEE RWW Radio & Wireless Week, San Diego, USA, Jan. 26, 2015.
14. *Multiscale Amplitude-Modulation Frequency-Modulation (AM-FM) Texture Analysis of Multiple Sclerosis in Brain MRI Images*, IEEE EMBS Distinguished Lecture, The Mind Research Network, University of New Mexico, Albuquerque, NM, USA, Jan. 20, 2015.
15. *An Overview of M-Health Video Communication Systems*, International Biomedical Engineering Conference (jointly with uHealthcare 2014), Guangju, Korea, Nov. 20-22, 2014.
16. *Linked2Safety – A next-generation, secure linked data medical information space, for semantically interconnecting EHRs and clinical trials systems, advancing patients safety in clinical research*, BHI-TC and J-BHI Sponsored Featured Symposia, Symposium – III: Medical and Health Informatics, IEEE International Conference on Biomedical & Health Informatics (BHI), Valencia, Spain, June 1-4, 2014.
17. *An Overview of M-Health Video Communication Systems*, IEEE EMBS Distinguished Lecture, IEEE EMBS Students Chapter, Faculty of Biomedical Engineering, New University of Lisbon, Lisbon, Portugal, March 6<sup>th</sup>, 2014.
18. *An Overview of M-Health Video Communication Systems*, IEEE EMBS Distinguished Lecture, IX National Conference on Biomedical Engineering Faculty of Biomedical Engineering, University of Porto, Porto, Portugal, March 7<sup>th</sup>, 2014.
19. *Cardiovascular Health Informatics: Predicting the Risk of Stroke Based on Ultrasound Image Analysis of the Atherosclerotic Carotid Plaque*, The Rayne Institute, Division of Imaging Sciences & Biomedical Engineering, Department of Cardiovascular Imaging/Department of Biomedical Engineering, King's College London, Jan. 21<sup>st</sup>, 2014, London, UK.
20. *Cardiovascular Health Informatics; LiSIS: A Scientific Workflow Life Sciences Informatics In Silico Models and Tools in the Discovery of Anticancer Compounds*, IEEE EMBS Distinguished Lecture, 13<sup>th</sup> International Conference on Hybrid Intelligent Systems (HIS'2013), Dec. 4<sup>th</sup> – 6<sup>th</sup>, 2013, Hammamet, Tunisia.
21. *An Overview of M-Health Video Communication Systems*, IEEE EMBS Distinguished Lecture, Department of Informatics, University of Sfax, Sfax, Tunisia, Dec. 3<sup>rd</sup>, 2013.
22. *Cardiovascular Health Informatics: Predicting the Risk of Stroke Based on Ultrasound Image Analysis of the Atherosclerotic Carotid Plaque*, IEEE EMBS Distinguished Lecture, International Conference on Engineering Sciences for Biology and Medicine (ESBM 2013), Co-organised by EMB Tunisia Chapter, Nov. 29 – Dec. 1<sup>st</sup>, 2013, Mahdia, Tunisia.
23. *An Overview of M-Health Video Communication Systems*, 13th IEEE International Conference on BioInformatics and BioEngineering (BIBE 2013), November 10-13, 2013, Chania, Greece.
24. *An Overview of M-Health Video Communication Systems*, IEEE EMBS Distinguished Lecture, First IEEE EMBS International Students Conference, Cairo University, Oct. 10<sup>th</sup>, 2013, Egypt.
25. *Cardiovascular Health Informatics: Predicting the Risk of Stroke Based on Ultrasound Image Analysis of the Atherosclerotic Carotid Plaque*, IEEE EMBS Distinguished Lecture, Department of Medical Informatics & Biostatistics, University of Medicine and Pharmacy of Craiova, May 24<sup>th</sup>, 2013, Craiova, Romania.

26. *An Overview of M-Health Video Communication Systems*, IEEE EMBS Distinguished Lecture, The 8<sup>th</sup> International Symposium on, Advanced Topics In Electrical Engineering, The Faculty of Electrical Engineering, University Politehnica of Bucharest, May 23rd, 2013, Bucharest, Romania.
27. *Cardiovascular Health Informatics: Predicting the Risk of Stroke Based on Ultrasound Image Analysis of the Atherosclerotic Carotid Plaque*, IEEE EMBS Distinguished Lecture, Department of Electrical and Computer Engineering, Technical University of Crete, May 15<sup>th</sup>, 2013, Crete, Greece.
28. *Abdominal Aortic Aneurysm Medical Video Transmission*, SenSIP Graduate Student Seminar Series, Arizona State University, January 2013, Phoenix, AZ, USA. (jointly with Dr A. Panayides).
29. *Keynote Talk: Cardiovascular Health Informatics: Predicting the Risk of Stroke Based on Ultrasound Image Analysis of the Atherosclerotic Carotid Plaque*, 7<sup>th</sup> Hellenic Conference on Artificial Intelligence, SETN 2012, May 28-31, Lamia, Greece.
30. *eHealth in Cyprus*, Advanced Health Technologies and Medical Tourism, Regional Innovation Council, 24 February 2012, Crete, Cyprus.
31. *Atherosclerotic Plaque Ultrasound Video Encoding, Wireless Transmission, and Quality Assessment Using H.264*, 4th Hellenic Biomedical Technology Conference, National Technical University of Athens, 20 January 2012, Athens, Greece. (jointly with Dr A. Panayides)
32. *Recent Advances in Ultrasound Image Analysis of the Atherosclerotic Carotid Plaque for the Assessment of Stroke*, eHealth 2010, satellite workshop of IEEE EMBC 2010 in the Faculty of Medicine, University of Uruguay, 4 September 2010, Colonia, Uruguay.
33. *A Review of m-Health e-Emergency Systems*, Health Telematics Workshop, Faculty of Medicine, University of Molise, 6 April 2009, Campobasso, Italy.
34. *Texture and Morphological Analysis of Ultrasound Images of the Carotid Plaque for the Assessment of Stroke*, High Performance Computing & Simulation Conference (HPCS 2008), June 3 - 6, 2008, Nicosia, Cyprus.
35. *A Review of m-Health e-Emergency Systems*, IEEE ITAB 2007, Information Technology Applications in Biomedicine, November 8-11, Tokyo, Japan, 2007. Keynote Lecture.
36. *Intelligent Information Medical Systems*, Current Trends in Informatics, PCI'2007 11th Panhellenic Conference in Informatics, 18-20 May, Patras, Greece, 2007. Keynote Lecture.
37. *A Review of m-Health e-Emergency Systems*, International seminar "Devolution of Health Care – a New Regional Perspective", 17 November, University of Helsinki, Finland, 2006.
38. *Artificial Neural Networks in Medical Imaging Systems*, Project 'ΕΥΦΥΕΣ' Biomedical Research Institute, University of Ioannina, November 2004.
39. *Citizen-Centered eHealth Services*, to the International Conference on Computer Systems and Technologies – CompSysTech'04 PhD students' workshop, 17-18 June, Rousse, Boulgaria, 2004.
40. *Citizen-Centered eHealth Services*, to the Benchmarking Cyprus in IT, Session on eHealth, 28 May, Nicosia, Cyprus, 2004.
41. *Artificial Neural Networks in Medical Imaging Systems*, to the 1<sup>st</sup> MEDINFO International Conference on Medical Informatics & Engineering, 12-15 October, Craiova, Romania, 2003.

42. *Computational Intelligence in Medical Systems*: to Medical Informatics Europe – Special Topic Conference 2002: The e-evolution of IT in the Health Care Systems, Nicosia, Cyprus, March 8-10, 2002
43. *TELEGYN: Intraoperative Tele-histopathology and Tele-Consultation in Gynecological Cancer and Breast Cancer*, to 6<sup>th</sup> Marianna Lordos Seminar, The Cyprus Anti – Cancer Society, Larnaca, February 8-10, 2002.
44. *Adaptive Neural Network Imaging in Medical Systems*, to 35<sup>th</sup> Asilomar Conference on Signals, Systems, and Computers, Monterey, California, USA, November 4-7, 2001.
45. *Medical imaging fusion applications: An overview*, to 35<sup>th</sup> Asilomar Conference on Signals, Systems, and Computers, Monterey, California, USA, November 4-7, 2001.
46. *Expert Network for the Prevention of Stroke*, to HEALTH-NET-CEEC 2001: Informatics Tools to Restructure Health Care Services - First Meeting of the Central and Eastern European Countries, Targu Mures, Romania, October 18-20, 2001.
47. *Experience with a Mobile Unit for Health Care Provision via Telematic Support – the EU AMBULANCE&EMERGENCY-112 projects*, to Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, New Mexico, USA, December 1, 2000.
48. *Medical Informatics Infrastructure in Cyprus*, to Workshop on Regional Health Information Networks-Health for you-Health 4U, Supported by the European Commission-WISE project, December 9-10, Thessaloniki, Greece, 1999.
49. *Intelligent Diagnostic Systems in Biosignal Analysis and Medical Imaging*, to Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, New Mexico, USA, October 18, 1999.
50. *Computer Aided Classification of Carotid Plaques using Neural Networks and Multi-Texture Analysis*, 13<sup>th</sup> Congress of the European Chapter of the International Union of Angiology, EUROCHAP' 99, May 26-30, Rhodes, Greece, 1999.
51. *Advances in Diagnostic Methods – Histopathology: Neural Network System for the Analysis of Nuclei in Histopathological Sections*, to 5<sup>th</sup> Marianna Lordos Seminar, The Cyprus Anti – Cancer Society, Larnaca, November 28, 1998.
52. *MUAP Analysis Algorithms-Recent Developments*, to VI International Conference on Computerized and Quantitative EMG, September 23-25, Vigo, Spain, 1998.
53. *Intelligent Systems in Biosignal Analysis*, to Laboratory of Vision Systems, Department of Electrical and Computer Engineering, University of Texas at Austin, Austin, Texas, USA, May 18, 1998.
54. *Intelligent Systems in Biosignal Analysis*, to Department of Computer Science, University of Groningen, Holland, May 4, 1998.
55. *Intelligent Systems in Biosignal Analysis*, to Biomedical Engineering Centre, Consorzio per la Ricerca e l'Educazione Permanente, Politecnico di Torino, January 16, 1998.
56. *Neural Information Processing Systems in Medical Imaging*, to International Course on Noninvasive Cerebrovascular Investigations, Nicosia, March 22, 1996.

57. *Motor Unit Action Potential Signal Processing with Artificial Neural Networks*, to The X International Congress of EMG and Clinical Neurophysiology, Kyoto, Japan, October 15-19, 1995.
58. *Classification Performance of Motor Unit Action Potential Features*, to First Neuroscientists Conference: Neuromuscular Disorders Thessaloniki-Nicosia, Thessaloniki, Greece, June 3-4, 1994.
59. *Firing Pattern, Recruitment and Interference Analysis*, to Fifth International Conference on Computerized and Quantitative EMG, McMaster University, Hamilton, Ontario, Canada, May 18-21, 1993.
60. *Quantitative EMG and its Contribution to Clinical Diagnosis*, to Regional Workshop in Neurology and Neurogenetics, Limassol, Cyprus, October 16-20, 1992.
61. *Review of Image Processing Techniques in Histopathology and Cytology*, to the Third National Seminar of the Association of Medical Physics and Biomedical Engineering, Nicosia, Cyprus, May 23rd, 1992.
62. *Neural Networks and Computer Aided Electromyography*, to Association of Medical Physics and Biomedical Engineering, Nicosia, Cyprus, March 1991.
63. *Artificial Neural Networks, and Quantitative Electromyography: An Overview*, to Cadwell Labs, **Distinguished Annual Lecture**, Kennewick, Washington, USA, October 1990.
64. *Computer Aided Clinical Electromyography*, to CDSP Research Centre, Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, USA, October 1990.
65. *Recent Advances in Computer Aided Electromyography*, to the Department of Neurology, College of Physicians and Surgeons of Columbia University, NY, USA, October 1990.
66. *Neural Networks*, Workshop on Expert Systems, 4th International Conference on Computerized and Quantitative EMG, Johannes-Gutenberg-Universität, Mainz, Germany, September 13-15th, 1990.
67. *Artificial Neural Networks in Clinical Electromyography*, to the Neurophysiology Group, Cadwell Labs, Kennewick, Washington, USA, September 1989.
68. *Numerical Pattern Recognition in the Automatic Analysis of Motor Unit Potentials*, to the Special Interest Group of Computer Aided Electromyography, 35th Annual Scientific Meeting of the American Association of Electromyography and Electrodiagnosis, NY, USA, September 1988.
69. *Numerical Pattern Recognition in the Automatic Analysis of Motor Unit Potentials: Technical Considerations and Clinical Practice*, to the Neurophysiology Group, Medelec Ltd, Old Working, Surrey, UK, August 1988.
70. *Numerical Pattern Recognition in the Automatic Analysis of Motor Unit Potentials: Hands on Experience*, to the IIIrd International Conference on Quantitative EMG, Larnaca, Cyprus, June 5-8th, 1988.



## IX. REFERENCES

References will be provided by (given in alphabetical order):

**Prof. Scott T. Acton**

Director, Virginia Video and Image Analysis  
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University of Virginia  
P.O. Box 400743  
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## APPENDIX A RESEARCH STATEMENT

### Part 1 – DEVELOPMENT OF MEDICAL DIAGNOSTIC SYSTEMS

#### A.1 Development of medical diagnostic and mobile health systems

Computer-aided diagnosis systems that provide a unique integration of a great variety of distinctly different technologies such as signal/image/video acquisition, preprocessing, feature extraction, dimensionality reduction, classification, and clinical decision making were developed. The reliability and robustness of the developed diagnostic systems is evident in their integration into clinical practice in several leading hospitals throughout the world. Furthermore, mHealth eEmergency systems were developed that led to the effective wireless communication of critical biosignals and ultrasound video through noisy channels. More specifically, the systems developed cover the following areas:

- Ultrasound Imaging: An Integrated System for the Assessment of the Risk of Stroke
- MRI: Quantitative Texture Analysis of Brain White Matter Lesions in Multiple Sclerosis. Assessment of Alzheimer's Disease Based on Texture Analysis of the Entorhinal Cortex.
- Endoscopy Imaging: A CAD System for the Assessment of Gynaecological Cancer
- Microscopy Imaging: Breast Cancer Biopsy image Analysis Support System (BASS) and Electron Microscopy (EM) Muscle Imaging System
- Biosignal Analysis: Electromyographic (EMG) Signal Analysis for Neuromuscular Disorders
- mHealth eEmergency Systems: Diagnostically Driven Efficient Video Compression Algorithms
- mHealth Interventions Based on X Reality Applications for Patients with Dementia and Breast Cancer.

Two of these systems are briefly summarized.

#### **Ultrasound image analysis of the atherosclerotic carotid plaque for the assessment of the risk of stroke**

An integrated modular neural network multi-feature/multi-classifier diagnostic system, including normalization, despeckle filtering, plaque segmentation, texture feature extraction, and neural network classification has been developed for differentiating between asymptomatic and symptomatic plaques in ultrasound imaging of the carotid for the assessment of the risk of stroke. This is the only carotid plaque diagnostic system that covers all image processing steps from acquisition to diagnosis. This system is used in several cardiovascular clinics in North America, Europe, and Asia, including Columbia University, McGill University, Imperial College, Tromsø University, and others. Moreover, an automated system for segmenting the intima-media complex as well as the intima layer and the media layer of the carotid artery was proposed that showed that the media layer thickness increases with age whereas the grey-scale median decreases with age. These new features could be used as prognostic biomarkers for atherosclerosis. The adoption of these techniques represents a shift of emphasis from the standard practice of visual assessment of the plaque images to a normalized, re-producible, and quantitative methodology.

#### **Mobile eHealth systems in the provision of advanced eEmergency services**

One of the first integrated eEmergency systems funded by 3 EU projects has been pioneered by our team. The system allows the transmission of vital biosignals (3 or 12 lead ECG, oxygen saturation, heart rate, blood pressure, temperature, and respiration) and video of the patient. The system was piloted in Sweden, Italy, Greece, and Cyprus. Recently, the system has been updated to support the transmission of high-resolution low-delay and clinically robust ultrasound video over mobile-WiMAX networks, introducing the concept of diagnostically-driven video encoding. Furthermore, this work has been extended to the use of HEVC standard combined with despeckle filtering that can yield significant bitrate savings compared to H.264/AVC. Moreover, the system has been clinically exploited for remote echocardiography using a tele-operated robot over commercial 4G/LTE wireless networks.

#### **A.2 Ongoing and Future Work**

##### **Explainable Models for Personalised Integrated Stroke Ultrasound Video Analysis**

Approximately 15% of all strokes are the result of carotid bifurcation atherosclerosis but at present, there is no established set of features that can identify all the potentially unstable and high-risk plaques. The overall objective of this work is to develop an integrated intelligent system for the stratification of stroke risk patients combining different clinical and imaging risk factors but based on the morphology and motion characteristics of the ultrasound video images of carotid bifurcation plaques producing moderate to severe stenosis (more than 70%). To achieve this objective we will: (1) Develop atherosclerotic video modelling and estimation using adaptive multiscale Amplitude Modulation-Frequency Modulation (AM-FM) texture analysis system representations.

Video modelling and estimation will be based also on motion, stress and strain analysis. (2) Develop stroke risk assessment using explainable models. Modelling will be based on logistic regression with polynomial transformation and feature visualization, residual networks with residual image analysis and 3D CNN (Convolutional Neural Networks) with convolutional layer visualization, derived based on optimized hierarchical modelling. (3) Develop personalized modelling by monitoring disease progression using follow-up video. Carotid ultrasound video modelling and analysis will be based on 1200 cases with severe stenosis followed for a period of 4-5 years which will be contributed to the project by the Asymptomatic Carotid Stenosis and Risk of Stroke (ACSRS) study group captured from 70 EU vascular centres. We expect that our system will be able to identify high risk groups of (a) asymptomatic patients that will contain 90% of strokes that will occur during follow-up and (b) of symptomatic patients that will need urgent operation within 24-48 hours. Identifying asymptomatic patients at high risk should spare 75% of patients from unnecessary operations with a saving of 1.5 billion Euro per year in Europe.

It is expected that this work will lead to a European Research Council (ERC) Advanced Grant application in 2021.

### **Normal Appearing Brain White Matter Changes in Relapsing Multiple Sclerosis in Serial MRI Scans**

There is a clinical interest in identifying normal appearing white matter (NAWM) areas in brain T2-weighted (T2W) MRI scans in multiple sclerosis (MS) subjects, which are susceptible to disease development and finding potential associations between texture feature changes and disease progression. Methods: The subjects investigated had a first demyelinating event (Clinically Isolated Syndrome-CIS) at baseline (Time0), and the NAWM0 (i.e. NAWM at Time0) of the brain tissue was subsequently converted to demyelinating plaques (as evaluated in a follow up MRI at Time6-12). 38 untreated subjects that had developed a CIS, had brain MRI scans within an interval of 6-12 months (Time6-12 at follow-up). An experienced MS neurologist manually delineated the demyelinating lesions at Time0 (L0) and at Time6-12 (L6-12). Areas in the Time6-12 MRI scans, where new lesions had been developed, were mapped back to their corresponding NAWM areas on the Time0 MR scans (ROIS0). In addition, contralateral ROIs of similar size and shape were segmented on the same images at Time0 (ROISC0) to form an intra-subject control group. Following that, texture features were extracted from all prescribed areas and MS lesions. Results: Texture features were used as input into Support Vector Machine (SVM) models to differentiate between the following: NAWM0 vs ROISC0, NAWM0 vs NAWM6-12, NAWM0 vs L0, NAWM6-12 vs L6-12, ROIS0 vs L0, ROIS0 vs L6-12 and ROIS0 vs ROISC0, where the corresponding % correct classifications scores were 89%, 95%, 98%, 92%, 85%, 90% and 65% respectively. Conclusions: Texture features may provide complementary information for following up the development and progression of MS disease. Future work will investigate the proposed method on more subjects.

### **Extracting Explainable Assessments of Alzheimer's disease via Machine Learning on brain MRI imaging**

A plethora of machine learning and deep learn-ing methods are used for the assessment of Alzheimer's Disease (AD) from brain structural changes as seen in Magnetic Resonance Imaging (MRI) with highly satisfactory results. However, these models are black-box and lack an explicit declarative knowledge representation and thus there is a difficulty in generating the underlying explanatory imaging structures. The objective of this study was to investigate the usefulness of rule extraction in the assessment of AD using decision trees (DT) and random forests (RF) algorithms and integrating the extracted rules within an argumentation-based reasoning framework in order to make the results easy to interpret and explain. The DT and RF algorithms were applied on brain MRI images acquired from normal controls (NC) and AD subjects. The KNIME analytics platform was used to compute the DT and the R project was used for the RF. The argumentation model implemented in the Gorgias framework achieved an average accuracy of 91%, exhibiting improved results compared to the models of DT and RF. The overall performance of all models in this study agree with other studies. In addition, the explanations given by our approach for the various possible predictions provide a more useful and complete assessment of the state of the patient/case at hand. This study demonstrated the usefulness of rule extraction in the assessment of AD based on MRI features and the positive results of the use of the argumentation based symbolic reasoning for composing and interpreting the ML results.

### **Physical Training for People with Dementia in Confined Mental Health Units**

In recent years, there has been growing interest in designing non-pharmacological interventions to improve the quality of life for People with Dementia (PwD) who face motor impairments. This work investigates the feasibility of using Virtual Reality (VR) technologies for the rehabilitation of 20 patients with moderate to severe dementia residing in a confined psychiatric hospital and discusses the impact of this interactions on motor training. To accomplish this a pilot study with patients performing three upper limb physiotherapy tasks in VR was carried out. The issues encountered during the testing and execution of the experimental tasks are discussed and a set of guidelines and recommendations for the future deployment of VR in healthcare services is provided.

## Part 2 – ESTABLISHING THE BIOMEDICAL ENGINEERING RESEARCH CENTRE (BERC)

In this part, a proposal is made towards the establishment of the *Biomedical Engineering Research Centre (BERC)*. This is based on the BERC proposal that was approved by the Council of the University of Cyprus in Nov. 2016 and subsequently ratified by the House of Representatives and announced in the Official Newspaper of the Republic of Cyprus in December 2019. Moreover, this proposal is also based on the EU H2020-WIDESPREAD-04-2017 Teaming Phase 2 grant application entitled *Integrated Precision Medicine Technologies Research Centre of Excellence (IPMT)*<sup>5</sup>, that was submitted in Nov. 2018.

### A.3 Executive Summary

**Motivation:** Existing centers in Cyprus like the Bank of Cyprus Oncology Center and the Cyprus Institute of Neurology and Genetics focus on patient care in a focused research/clinical field. Currently, in the University of Cyprus there are about 20 teams conducting research in the biomedical sciences and engineering fields. However, they work mainly independently and in relatively small/medium scale projects, due to limited resources and focused expertise. BERC targets to bring these individuals together in forming a new dynamic team that will combine the academic knowledge and experience of its clinical and scientific collaborators to address large-scale problems. The integration and synergy of various scientific disciplines and spatial scales (nano/micro/macro) is a key component for the development of innovative solutions that could lead to the offering of precision medicine interventions.

**Vision:** The vision of the **Biomedical Engineering Research Centre** is to be established as an inspiring, interdisciplinary, research and innovation centre, which will become a world leader in **the development of new technologies to further enable and accelerate the development, translation, and application of precision medicine**. The theme of the Centre is not only **scientifically exciting** and **clinically relevant**, it is also **very timely**. Over the last decade, scientific knowledge and technological innovations have matured to the point where the stage is ready for the next technological breakthroughs. However, to achieve the sophistication required for precision medicine technologies, a multipronged strategy is required as is evident by the limited success of research efforts focusing on single technological approaches. The Centre will integrate the necessary building blocks for the implementation of complex precision technologies: (i) **eHealth Systems**, (ii) **Computational Biology, Biophysics and In silico Modelling**, (iii) **Bioinformatics & Systems Medicine**, (iv) **Sensing, Electronics and Embedded Systems**, (v) **Medical Imaging**, (vi) **Medical Physics and Technology**, (vii) **Bio Materials, Drugs and Therapeutics**, and (viii) **Biomechanics**, with the support of (ix) **Molecular/Cellular Biosciences** and (x) **Clinical Development & Validation**. The Centre aims to focus the application of the developed technologies on key clinical fields: (i) **Cardiovascular**, (ii) **Pulmonology**, (iii) **Oncology**, (iv) **Neurology** and other case studies. Although the scope of the Centre may appear broad, these technologies will be generalized to tackle the common underlying, multifactorial, pathophysiological pathways, overcoming the current significant barriers in precision medicine and, thus, achieving widespread clinical utility and impact. The Centre will achieve a level of focused integration that does not currently exist but is strongly recommended by many EU and international initiatives and consortia.

The proposed Centre will establish a complete ecosystem to (i) nurture interdisciplinary convergence and integration, with common focus, leading to excellence and sustainability, (ii) develop and expand an enabling infrastructure integrating specimen and data collection and advanced analytics, (iii) establish an interdisciplinary education and training platform for human capital development, stakeholder engagement, and a common “language” for the varied interdisciplinary fields involved, (iv) spearhead innovation and entrepreneurship for long-term financial sustainability and regional/European economic growth, and at the same time (v) orchestrate the necessary organisational transformation to create a flexible, expanding, Centre with a thriving interdisciplinary population.

**Implementation work plan:** The BERC workplan will be implemented under the following three phases: **Phase 1 Establishment & Infrastructure & Capacity Building – Years 1 to 2:** Phase 1 focuses on establishing the BERC and setting up the administrative structure of the Centre, developing its strategies and internal procedures (innovation management, recruitment, hiring, retention, and training), hiring personnel, developing the infrastructure, and completing the formation of the Centre. **Phase 2 Consolidation & Growth – Years 3 to 5:** Phase 2 emphasises on growth by having fully operational infrastructure, attracting significant funding from the EU and other resources, and becoming a point of reference across Europe for research on precision medicine technologies. **Phase 3: Achieving Sustainability - Years 6 to 7:** Phase 3 is the period of transition to full self-sustainability.

Concluding, it is anticipated that the establishment of BERC will lead to the development of innovative biomedical engineering solutions for the benefit of the citizen.

<sup>5</sup> Jointly submitted with Prof. C. Pitris of the Dept. of Electrical and Computer Engineering as Co-PI, where a total of 36 faculty members participated from the School of Pure and Applied Sciences, the School of Engineering and the School of Medicine. Although the IPMT proposal was not awarded, significant and extensive effort was invested in preparing it and it has all the constituent components needed for the establishment of BERC.

## APPENDIX B SELECTED PUBLICATIONS

- J.1 A.S. Panayides, M.S. Pattichis, M. Pantziaris, A.G. Constantinides, C.S. Pattichis, *The Battle of the Video Codecs in the Healthcare Domain-A Comparative Performance Evaluation Study Leveraging VVC and AV1*, **IEEE Access**, vol. 8, pp. 11469-11481, 2020. DOI: [10.1109/ACCESS.2020.2965325](https://doi.org/10.1109/ACCESS.2020.2965325).
- J.2 S. Leandrou, D. Lamnisos, I. Mamais, P. Kyriacou, C. S. Pattichis, *Assessment of Alzheimer's Disease Based on Texture Analysis of the Entorhinal Cortex*, **Frontiers in Aging Neuroscience**, vol. 12, Article 176, pp. 1-12, 2020. <https://doi.org/10.3389/fnagi.2020.00176>.
- J.3 A.S. Panayides, M. S. Pattichis, S. Leandrou, C. Pitris, A. Constantinidou, and C.S. Pattichis, *Radiogenomics for Precision Medicine with A Big Data Analytics Perspective*, **IEEE Journal of Biomedical and Health Informatics**, vol. 23, no. 5, pp. 2063-2079, 2019. DOI: [10.1109/JBHI.2018.2879381](https://doi.org/10.1109/JBHI.2018.2879381).