Constantinos Pitris

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EDUCATION

University of Texas at Austin

| Degree: | Bachelor of Science, Honors |
|---------------|---|
| - | Master of Science |
| Thesis Title: | Multi-pixel fluorescence instrumentation and clinical study for the diagnosis of pre-cancer and cancer of the human cervix. |
| Major: | Electrical Engineering |
| Department: | Electrical and Computer Engineering (Biomedical Engineering Program) |
| Graduation: | May 1993, May 1995 |

Massachusetts Institute of Technology

| Degree: | Ph.D. |
|---------------|---|
| Thesis Title: | High Resolution Imaging of Neoplasia Using Optical Coherence Tomography. |
| Major: | Electrical and Medical Engineering (MEMP) |
| Department: | MIT Electrical Engineering & Harvard-MIT Div. of Health Sciences and Technology |
| Graduation: | July 2000 |

Harvard Medical School

| Degree: | MD, magna cum laude |
|---------------|--|
| Thesis Title: | In Situ Imaging Using Spectrally Encoded Confocal Microscopy |
| Major: | Medicine |
| Department: | Harvard-MIT Div. of Health Sciences and Technology |
| Graduation: | June 2002 |

RESEARCH AND TEACHING INTERESTS

Research Interests

Biomedical imaging and applied optics. The overlying goal of this research is the introduction of new technologies in clinical applications for the improvement of the diagnostic and therapeutic options of modern health care systems to directly impact patient prognosis and outcome.

Teaching Interests

Optics and biomedical engineering. Combine a sound basis in electrical and biomedical engineering with a thorough understanding of biological systems to prepare students for leading positions in the field of biomedical engineering.

CURRENT APPOINTMENTS

11/19-Present: Professor, Department of Electrical and Computer Engineering, University of Cyprus

Leading the "Optical Diagnostics Laboratory" with research interests in the area of optical medical diagnostics, Optical Coherence Tomography, Raman spectroscopy, and signal and image processing.

PAST EMPLOYMENT

7/02-11/19: Lecturer, Assistant and Associate Professor, Department of Electrical and Computer Engineering, University of Cyprus Assisted in the formation of the Electrical Engineering Department at the University of Cyprus as well as the establishment of a research laboratory in the area of biomedical imaging and applied optics.

8/06-8/09: Adjunct Lecturer, Cyprus International Institute in Association with the Harvard School of Public Health

Taught the neuron and muscular physiology section of the graduate physiology course.

7/00-6/02: Postdoctoral Research Associate, Wellman Laboratories of Photomedicine, Massachusetts General Hospital and Harvard Medical School.

Worked at the Massachusetts General Hospital and Harvard Medical School on the development of endoscopic confocal microscopy. The objective of the project was to develop and construct a prototype clinical confocal microscopy system capable of non-invasively obtaining images of cellular microstructure.

1/96-7/00: Research Assistant, Research Laboratory of Electronics, Massachusetts Institute of Technology. Performed research in the use of Optical Coherence Tomography (OCT) for the diagnosis of neoplasia and cancer under the supervision of Prof. James G. Fujimoto. Research included ex vivo imaging surveys, technology development and clinical studies, necessary to demonstrate the feasibility of OCT imaging as a diagnostic tool for the early detection of pre-malignant and cancerous lesions.

6/96-12/96: Teaching Assistant, Dept. of Electrical Engineering and Computer Science, Massachusetts Institute of Technology.

Assisted Prof. Fujimoto with his graduate level Optical Engineering class. Provided solutions for the homework, taught on an individual basis during office hours and lectured occasionally.

1/94-7/95: Research Assistant, Biomedical Engineering Program, University of Texas at Austin. Worked, under the supervision of Prof. Rebecca Richards-Kortum, on the development of a fluorescence spectroscopy system for the detection of cervical intraepithelial neoplasia (CIN). The project included design, implementation and clinical testing in patients at the M.D.Anderson Cancer Center at Houston, Texas.

9/93-1/94: Teaching Assistant, Department of Electrical and Computer Engineering, University of Texas at Austin.

Managed two sections, of 40 students each, of the undergraduate Introduction to Logic Design course, supervised by Dr. Charles Roth. Duties included preparation and/or administration of tutorials, exams and individual advising.

9/92-5/93: Tutor, College of Engineering, University of Texas at Austin.

Tutored, on an individual basis, new engineering students to help them overcome their academic difficulties in Electrical Engineering and Math courses. (Network Theory, Electronic Circuits, Electromagnetics, Computer Programming, Logic Design, Linear Algebra, etc.)

RESEARCH FUNDING

EXTERNAL FUNDING

External Funding as Principal Investigator

| | Title | Finding Agency | Start Date | End Date | Amount |
|---|---|--|------------|------------|-------------------------|
| 1 | Early diagnosis of Melanoma with High Frequency Ultrasound | Research Promotion Foundation of Cyprus | Sept. 2004 | Aug. 2007 | £ 74,800 (€ 124,667) |
| 2 | Diagnosis of Urinary Tract Infections using Surface Enhanced Raman Spectroscopy from bioactivated nano- surfaces | Research Promotion Foundation of Cyprus | Sept. 2005 | Aug. 2007 | £ 72,775 (€ 121,292) |
| 3 | Neurorraphy guidance using Optical Coherence Tomography | Research Promotion Foundation of Cyprus | Sept. 2005 | Aug. 2007 | £ 74,910 (€ 124,850) |
| 4 | Fast UTI diagnosis and antibiogram from nanosurface-enhanced Raman | Research Promotion Foundation of Cyprus | Dec. 2006 | Nov. 2008 | £ 59,398 (€98,996) |
| 5 | Diagnostic Identification of Tissue Composition and Morphology using Spectroscopic Optical Coherence Tomography | Research Promotion Foundation of Cyprus | Oct. 2009 | Sept. 2011 | € 158,276 |
| 6 | Multipotent Theranostic Metal-Based Scaffold for Molecular Targeting of Colorectal Cancer | Research Promotion Foundation of Cyprus | June. 2012 | May. 2014 | € 178,803 |
| 7 | Novel Technology Development for Super-Resolution Optical Coherence Tomography | Research Promotion Foundation of Cyprus | June 2012 | May 2014 | € 166,980 |
| 8 | Integrated Precision Medicine Technology Research Center of Excellence | EU, H2020- WIDESPREAD-04-2017- TeamingPhase1 | Sep. 2017 | Aug. 2018 | € 400,000 |
| 9 | Next-generation theranostics of brain pathologies with autonomous externally controllable nanonetworks: a trans-disciplinary approach with bio-nanodevice interfaces | EU, H2020- FETOPEN-2018-2019- 2020-01 | Jan. 2019 | Dec. 2022 | € 5,881,707 |

Total € 7,255,571

External Funding as Co-Principal Investigator

| | Title | Finding Agency | Start Date | End Date | Amount |
|---|---|--|------------|------------|-------------|
| 1 | Development and testing of a robotic system for minimally- invasive interventions with real- time MRI guidance (Co-PI: E. Chrystoforou) | Research Promotion Foundation of Cyprus | Jan. 2009 | Dec. 2010 | € 136,510 |
| 2 | KIOS Research Center for Intelligent Systems and Networks (Coordinator: M. Polycarpou) | Research Promotion Foundation of Cyprus | Oct. 2009 | Sept. 2013 | € 1.400.000 |
| | | | | Total | € 1.536.510 |

External Funding as Participating Investigator

| | Title | Finding Agency | Start Date | End Date | Amount |
|---|--|---|---------------|------------|--------------------------|
| 1 | Research Infrastructure for Nanotechnology Sensors in Cyprus (NanoCyprus) (PI: C. Doumanides) | Research Promotion Foundation of Cyprus | Dec. 2004 | Dec. 2008 | £ 249,986 (€ 427,476) |
| 2 | Novel Fluorescent Biomarkers for in vivo molecular diagnosis of colon cancer (PI: A. Odysseos) | Research Promotion Foundation of Cyprus | June 2007 | May 2009 | £ 90,364 (€ 154,522) |
| 3 | Molecular Markers of Antineoplastic Efficacy of Chromanol Esters (PI: A. Odysseos) | Research Promotion Foundation of Cyprus | Jan. 2009 | Dec. 2010 | € 169,916 |
| 4 | Next Generation Hybrid Optical- Wireless Communications Laboratory (Pls: S. lezekiel, G. Ellinas) | Research Promotion Foundation of Cyprus | Feb. 2009 | Jan. 2013 | €353,400 |
| 5 | KIOS Research and Innovation Center of Excellence (PI: M. Polycarpou) | EU, H2020, WIDESPREAD-01-2016- 2017-Teaming Phase 1 | Sep. 2015 | June 2016 | € 400,000 |
| 6 | KIOS Research and Innovation Center of Excellence (PI: M. Polycarpou) | EU, H2020, WIDESPREAD-01-2016- 2017-Teaming Phase 2 | March 2017 | Feb. 2024 | € 40,000,000 |
| 7 | A Fully Autologous Cell-based System for Delivery of Molecular Therapeutics to Brain Malignancies (Pl: A. Odysseos) | Research Promotion Foundation of Cyprus | Febr. 2019 | Febr. 2021 | € 63,784 |
| 8 | A Technologically Integrated Digital Platform for Personalized Predictions of Metastatic Brain Tumor Development and Response to Treatment (PI: V. Vavourakis) | Cyprus Cancer Research Institute | July 2021 | June 2024 | € 35,000 |

| 9 | Screening for Barrett's Esophagus | National Institutes of | Sep. 2021 | Aug 2025 | € 210,000 |
|---|-----------------------------------|------------------------|-----------|----------|-----------|
| | Progressors with Multimodality | Health, USA | | | |
| | Tethered Capsule Image-Guided | | | | |
| | Biopsy (PI: G. J. Tearney) | | | | |

Total

€ 41.814.098

Advising

CURRENT ADVISEES

Current Postdoctoral Associates

Current PhD Students

- 1. Kosmia Loizidou, "Digital Subtraction Mammography", Expected Graduation: June 2022.
- 2. Rafaella Solomou, "Disease Networks", Expected Graduation: June 2023.
- 3. Pavlos Alexandros Dimitriou, "Health Network Applications", Expected Graduation: June 2024.
- 4. Nicolas Hadjittooulis, "Machine Learning for CAD", Expected Graduation: June 2024.

Current MSc Students

Current Undergraduate Students

- 1. Georgios Aristodimou, "BCI using commercial EEG", Expected Graduation: June 2022
- 2. Andreas Karapanos, "Analysis of motion from wearable sensor", Expected Graduation: June 2022
- 3. Longinos Kyprianou, "-Detection of Voice Commands using ML", Expected Graduation: June 2022
- 4. Michalis Lazari, "Emotion detection from voice signals", Expected Graduation: June 2022
- 5. Elias Beitis, "Analysis of Cardiac Rate from Wearable Sensor", Expected Graduation: June 2022
- 6. George Tsingis, "Detection of Voice Commands", Expected Graduation: June 2022
- 7. Michalis Chrysostomou, "Detection of stress from voice analysis", Expected Graduation: June 2020

Past Postdoctoral Associates

- 1. Ismini Charalambous, PhD, Postdoctoral Associate, Novel OCT Techniques
- 2. Louiza Loizou, PhD, (in collaboration with EPOS-Iasis Research and Development), Postdoctoral Associate, Molecular Imaging of Gastrointestinal Cancers
- 3. Yiota Christou, PhD, (in collaboration with EPOS-Iasis Research and Development), Postdoctoral Associate, Molecular Imaging of Gastrointestinal Cancers
- 4. Rashid Ilmi, PhD, Chemistry, Postdoctoral Associate, Multipotent lanthanide based theranostic agents
- 5. Evgenia Bousi, PhD, Electrical Engineering, Postdoctoral Associate, Novel Techniques for Super-Resolution Optical Coherence Tomography.
- 6. Khodor Issa, PhD, (in collaboration with EPOS-Iasis Research and Development), Postdoctoral Associate, Molecular Imaging of Gastrointestinal and Brain Cancers
- 7. Christos Photiou, Postdoctoral Associate, Advanced Analysis of Optical Coherence Tomography.

Past PhD Students

- 1. Alexandros Kyriakides, "Noise-Robust Classification using Rank Order Kernels." June 2012.
- 2. Evgenia Bousi, "Novel Techniques in Optical Coherence Tomography." July 2012.
- 3. Myria Angelidou, "Design of Novel Bioinspired Multiscale Nanostructures." May 2014.
- 4. Katerina Hadjigeorgiou, "UTI point-of-care diagnosis and antibiogram using SERS." May 2020
- 5. Christos Photiou, "Contrast Enhancement in Optical Coherence Tomography." May 2020.
- 6. Louiza Sophokleous, "Lung resistance analysis for estimation of lung properties in premature infants," May 2021.

Past MSc Students

- 1. Myria Angelidou, "Design of nanosurfaces with optimized optical properties using the DDA algorithm." May 2007.
- 2. Andreas Kartakoulis, "Spectral Analysis of Optical Coherence Tomography Signals." Admitted: Jan. 2006, May 2008.
- 3. Andreas Andreou, "Anaerobic Co-Digestion of Cow Manure with Barley Straw and Low Hectolitric Weight Barley Seeds", Feb. 2012
- 4. Katerina Hadjigeorgiou, "A Novel Method for Urinary Tract Infection Diagnosis and Antibiogram Using Raman Spectroscopy." May 2012
- 5. Neophytos Neophytou, "ECG Event Detection & Recognition using Time-Frequency Analysis," June 2012 (Univ. of Patras)
- 6. Maria Fiakkou, "Use of OCT for the evaluation of watermelon properties," June 2015.
- 7. Michallis Kassinopoulos, "Development of a new spectroscopic metric for scatterer size estimation using OCT," June 2015.
- 8. Panos Ntoas, "Dual Channel stethoscope for sound localization," May 2016.
- 9. Kosmia Loizidou, "Digital Subtraction Mammography," May 2018.
- 10. George Michael, "Detection of stress from voice analysis", May 2019.
- 11. Xenios Mormoris, "Bone Density Measurement Using the DXA Method Estimation of Repeatability in State-run Hospitals Using an Online Application", May 2019.

Past Undergraduate Students

- 1. Avgousta Kyriakidou, "Automated quantitative evaluation of histologic images from normal and dysplastic nevi." Senior Project, 9/2004-5/2005. Third prize, Research Promotion Foundation national competition for undergraduate research (PROFIT), 2005.
- Katerina Hadjigeorgiou, "Antibiotic resistance/susceptibility detected using Raman Spectroscopy." May 2008.
- 3. Christos Moustakas, "Nutrient content analysis using Raman Spectroscopy." May 2008.
- 4. Andreas Tomazou, "Arbitrary imaging patterns guided using an optical encoder." May 2008.
- 1. Elias Elia, "Spectrogram-based word recognition." May 2009.
- Argyro Stavrou, "Second-hand smoking inhalation by-product analysis using Raman Spectroscopy." May 2009.
- 3. Christakis Christodouloy, "Aluminum Nanostructures for SERS." May 2009.
- 4. Neophytos Neophytou, "Statistical Segmentation and Classification of OCT skin images." May 2010.
- 5. Elisavet Xenofontos, "Aluminum Nanostructures for SERS." May 2010.
- 6. Savvas Savva, "Spectrogram-based word recognition." January 2011.
- 7. Yvonne Neophytou, "Triage and Monitoring Algorithms." May 2011.
- 8. Erato Kyriakou, "Evaluation of Wine Contents Using Raman Spectroscopy," May 2012.
- 9. Chrysovalanto Aristeidou, "Study of the effect of static electricity's effect in the Sudden Infant Death Syndrome (SIDS)," May 2012.
- 10. Iliana Giannarou, "Word recognition in voice signals based on time-frequency features," May 2012.
- 11. Vasiliki Daniel, "Estimation of bacterial concentrations using laser transmission," May 2012.
- 12. Nicolas Melanarkitis, "Low level laser irradiation for growth retardation in potatoes," May 2012.
- 13. Pantelitsa Nikolaou, "Analysis of electrocardiogram (ECG), respiratory, and other waveforms from intensive care unit (ICU) patients," May 2012.
- 14. Chrystalla Patsali, "Optical coherence tomography acquisition and processing optimization based on the LabView Cuda functions," May 2012.
- 15. Andrie Soteriou, "Use of OCT for the evaluation of potato properties," May 2012.
- 16. Maria Fiakkou, "Use of OCT for the evaluation of watermelon properties," May 2013.
- 17. Chrysostomos Ttooulou, "Speech analysis of the Cypriot Dialect," May 2014.

- 18. George Petrou, "Speech analysis of the Cypriot Dialect," May 2014.
- 19. Andria Vasiliou, "Use of laser speckle for the non-destructive evaluation of apples," May 2014.
- 20. Panagiota Kleanthous, "Pharmacokinetics study of biomarkers with fluorescence microscopy," May 2014.
- 21. Xenia Nestoros, "ECG signal analysis with time-frequency techniques," Expected Graduation: Dec. 2014
- 22. Constantinos Timinis, "Use of Raman spectroscopy for the dating of meat," Expected Graduation: May 2016.
- 23. Omiros Omirou, "Laser speckle image analysis for the detection and quantification of bacteria," May 2016.
- 24. George Nicolaou, "Drawing movement analysis as a diagnostic tool," May 2016.
- 25. Panagiotis Zacharoudiou, "Eye tracking as a diagnostic tool," May 2016.
- 26. Demetra Yerolemidou, "Skull Fracture Detection in CT Images," January 2016
- 27. Andria Fella, "Skull Fracture Detection in CT Images," January 2016
- Andria Petsa, "Concurrent ECG and auscultation signal transmission through a single audio channel," May 2017.
- 29. Antonia Ioannou, "CT image analysis for identification of fractures in the ER," May 2017.
- 30. Constantinos Christofides, "Evaluation of meat fat content using Raman Spectroscopy," May 2017.
- 31. Sofia Solonos, "Detection of skull fractures in CT images using pattern recognition", May 2018.
- 32. Pavlos losif, "Detection of fractures in different sections of CT images of the skull", May 2018.
- 33. Stefania Charalambous, "Detecting abnormalities in digital subtraction mammography", May 2018.
- 34. Eleni Chilidi, "Improvement of the detection of GI cancers using spectral features of OCT", May 2018.
- 35. Marios Louca, "Improvement of OCT lateral resolution using single pixel camera techniques", May 2018.
- 36. Evelthon Markantonis, "Quantification of hydration in OCT images of skin", May 2019.
- 37. Charlambos Krinou, "Sound interface for robot programming in Scratch", May 2019.
- 38. Andreas Kyprianou, "Detection of emotional state from voice signals", December 2021.
- 39. Andreas Karapanos, "Motion and heart rate analysis from electronic bracelet sensors", May 2022.
- 40. Longinos Kyprianou, "Word detection in voice signals using deep learning", May 2022.

MS COMMITTEES

University of Cyprus

- Chrysafis Andreou, "Design and fabrication of dielectrophoresis-based devices for cell manipulation and separation, and quantification of microparticle response in electric field by tracking software," May 2008, Supervisor: George Georgiou.
- 2. Panayiota Demosthenous, "Biocompatible fluorescent marker characterization," May 2009, Supervisor: Constantinos Christofides.
- 3. Christoforos keroglou, "Development of robotic systems for the performance of minimally invasive interventions under MRI guidance," June 2010, Supervisor: Eftychios Christoforou.
- 4. Marios Marcou, "Recursive least-squares estimation of nonlinear models using Laguerre function expansions and application to nonstationary modeling of cerebral hemodynamics from spontaneous physiological variability", May 2011, Supervisor: George Mitsis
- 5. Artemis Milidoni, "Electricity production with fuel cells for farm installations", May 2012, Supervisor: Elias Kyriakides.
- 6. Anthi Alexandrou, "Non-stationarity in human's brain Resting State Networks", May 2013, Supervisor: George Mitsis
- 7. Konstantinos Ntovas, "Volumetric analysis of Alzheimer's and mild cognitive impairment MR images", January 2016, Supervisor: George Mitsis

8. Maria Tziakouri, "Automatic recognition of AF and other arrhythmias from a small ECG window", May 2017, Supervisor: Christina Orphanidou.

PhD Committees

University of Cyprus

- 1. Neofytos Loucaides, "Electronic Particle Manipulation: Numerical Simulation and Device Design," May 2009, Supervisor: George Georgiou
- 2. Guillaume Garreau, "A Bioinspired System for Acoustic Scene Analysis," March 2014, Supervisor: Julio Georgiou.
- 3. Christophoros Mannaris, "Ultrasound Enhanced Drug Delivery: Temperature and Pressure activation approaches," May 2014, Supervisor: Michael Averkiou.
- 4. Agathoklis Papadopoulos, "Accelerating Bioinformatics And Biomedical Appications via Massively Parallel and Reconfigurable Systems", October 2014, Supervisor: Theocharis Theocharides.
- 5. Panayiota Demosthenous, "A Fluoroscopic Cancer Screening Capsule For The Small Intestine", Supervisor: Julius Georgiou
- 6. Charalambos Andreou, "HighPerformance, LowPower Integrated Reference Circuits And Reference Circuits For Space Applications", May 2015, Supervisor: Julius Georgiou
- 7. Christof Beck, "A Wearable, Multimodal, Vitals Acquisition Unit for Intelligent Field Triage", May 2016, Supervisor: Julius Georgiou
- 8. Evripides Kyriakides, "Memristors for Bioinspired Circuit Design", September 2016, Supervisor: Julius Georgiou.
- 9. Maria Anastasiadou, "Signal quality improvement and long-term heart-brain interactions in patients with epilepsy", January 2016, Supervisor: George Mitsis

Other Universities

1. Andreas Stylianou, "Combined Information from AFM Imaging and SHG signal analysis of Collagen Thin Films," National Technical University Athens, May 2013, PhD Supervisor: Dido Yova.

TEACHING

ACTIVE COURSES

ECE100 – Introduction to Electrical Engineering (Fall Semester, since 2018/19)

The main objective of the course is to introduce students to the fields of technology, particularly to the areas of Electrical and Computer Engineering. Through lectures, homework and group study, students will learn the fundamental principles on which engineering is based and will receive the necessary bases for successful completion of their studies. The students will learn about the various specialties of Electrical and Computer Engineering, the issues and problems they are dealing with and the approaches by which they resolve them. The course will also address basic design ideas and the use of tools such as computers, libraries, software and measurement devices.

(http://www.eng.ucy.ac.cy/cpitris/courses/ECE100/)

ECE370 – Introduction to Biomedical Engineering (Spring Semester, since 2012/13)

This course is an introduction to biomedical engineering to demonstrate the application of fundamental principles of engineering from all traditional disciplines (Electrical, Mechanical, Chemical, Materials) to solve problems in medicine and biology. Topics covered include medical instruments and design, biomechanics, biomaterials, applications of computers in medicine, and medical imaging. The relevant principles of anatomy and physiology are also introduced.

(http://www.eng.ucy.ac.cy/cpitris/courses/ECE370/)

ECE429 – Digital Signal Processing (Fall Semester, 2020/21)

Undergraduate level course on the analysis and processing of discrete-time signals and systems which includes Fourier and Z-transform analysis techniques, the discrete Fourier transform, elements of FIR and IIR filter design, filter structures, FFT techniques for high speed convolution and quantization effects. (http://www.eng.ucy.ac.cy/cpitris/courses/ECE429/)

ECE435 – Optics and Photonics Laboratory (Spring Semester, since 2012/13)

Laboratory course covering concepts in optics and photonics. It includes the laws of geometric optics, the thin lens equation, lasers and coherence, refraction, polarization, wave guides, optical fiber management and characteristics and optical communications.

(http://www.eng.ucy.ac.cy/cpitris/courses/ECE435/)

ECE471/671 – Neurophysiology and the Senses (Fall Semester, since 2006/7)

Dual level course covering the principles of neurophysiology, sensory systems and higher functions. Includes the physiology of excitable cells with emphasis on cellular mechanisms, synaptic integration, signal processing, and sensory/motor interactions in nervous systems, computer simulations and hands on experience with stimulating and recording neural signals.

(http://www.eng.ucy.ac.cy/cpitris/courses/ECE471/)

ECE477/677 – Biomedical Optics (Spring Semester, 20011/12-2013/14, and since 2018/9)

Dual level course covering the principles of biomedical optics. Includes laser and non laser sources and detectors, spectroscopic techniques (fluorescence, raman, SERS, etc.), imaging techniques (microscopy, confocal microscopy, photoacoustic, OCT, etc.) as well as some therapeutic application (photodynamic therapy, low light level therapy, etc.). (http://www.eng.ucy.ac.cy/cpitris/courses/ECE477/)

PAST COURSES

ECE001 – Health and Technology, University of Cyprus (Fall Semester, 2003/4-2013/14)

General undergraduate elective providing students of all disciplines with the background to both understand the technological basis of modern medical systems and discover their origin, socio-economic impact and future innovations. (http://www.eng.ucy.ac.cy/cpitris/courses/ECE001/)

ECE203 – Circuits and Measurements Laboratory (Fall Semester, 2005/6 – 2010/11)

Sophomore ECE undergraduate laboratory on the basics of electrical measurements and instrumentation including basic, passive, electrical circuits, DC and AC analysis..

(http://www.eng.ucy.ac.cy/cpitris/courses/ECE203/)

ECE623 – Digital Signal Processing (Spring Semester, 2005/6)

Graduate level course on the analysis and processing of discrete-time signals and systems which includes Fourier and Z-transform analysis techniques, the discrete Fourier transform, elements of FIR and IIR filter design, filter structures, FFT techniques for high speed convolution and quantization effects. (http://www.eng.ucy.ac.cy/cpitris/courses/ECE623/)

ECE626 – Image Processing (Spring Semester, 2004/5)

Graduate level introduction to the principles of modern image processing with a brief review of signals and systems, 2-d transforms and filters, image processing basics, edge detection, rank order (median) filtering, motion estimation, image enhancement, image restoration, image coding and other advanced topics. (http://www.eng.ucy.ac.cy/cpitris/courses/ECE626/)

CII – Human Physiology, Neuro & Muscular Physiology Section (Fall Semester, 2006/7-2008/9)

The neuron and muscle physiology section of the graduate level Physiology course at the Harvard-Cyprus International Institute. Covers the basic principles of neuronal communication, the central and peripheral nervous system, basics of muscle contraction and motion initiation and coordination.

(http://www.eng.ucy.ac.cy/cpitris/courses/CIIPhys/index.html)

CONSULTING AND INDUSTRIAL EXPERIENCE

Consulting

- National Cancer Institute, National Institutes of Health, USA, Proposal evaluator, Optical diagnostics area. Nov. 2007.
- European Commission, DG Research, FP7 Proposal Evaluator, Nanomedicine area. March 2007 2010
- European Commission, DG Research & International Science and Technology Center (ISTC), Proposal Evaluator. September 2004 2008
- Ministry of Industry, Commerce and Tourism, Nicosia, Cyprus. Evaluation of various proposals related to biomedical engineering. January 2004 2010
- Hermes Research Center & Business Incubator, Nicosia, Cyprus. Evaluation of various proposals related to biomedical engineering. January 2004 2008

Entrepreneurship

- Cofounder and consultant at "ECM Momentums, Ltd," Nicosia, Cyprus, a new startup created to tackle food quality and safety testing issues. Sept. 2012-2014.
- Cofounder and consultant at "Spectram Ltd," Tel-Aviv, Israel, a new startup for non-invasive, optical and ultrasound based, cancer diagnostics. May. 2009-2012.
- Cofounder and consultant at "EPOS Iasis Research and Development Ltd," Nicosia, Cyprus, a new startup for minimally invasive, optical and endoscopic based, cancer diagnostics. Sept. 2004 Present

PROFESSIONAL MEMBERSHIP

Member

Institute of Electrical and Electronic Engineers (IEEE), Member Since: 1989.

Optical Society of America (OSA), Member Since: 1995.

Cyprus Association of Medical Physics and Biomedical Engineering (CAMPBE), Member Since: 1997

International Society for Optical Engineering (SPIE), Member Since: 2003.

Massachusetts Medical Society (MMS), Member: 1998-2002.

Reviewer

Optics Letters, Optics Express, Journal of the Optical Society of America A, Applied Optics, Optics Communications, Journal of Biomedical Optics, Journal of Breast Cancer Research, Nanomedicine, Biomedical Signal Processing and Control.

ACTIVITIES

Conferences and Committees

- Vice Chair and Program Committee, International Conference on Nanotheranostics (ICoN 2013), 24-26 September 2013, Larnaca, Cyprus.
- Program Committee, ISABEL 2011, 4th International Symposium on Applied Sciences in Biomedical and Communication Technologies, October 26-29, 2011, Barcelona, Catalonia, Spain.
- Organizing Committee, IEEE Biomedical Circuits and Systems Conference (BioCAS) 2010, Paphos, Cyprus, November 3-5, 2010.

- Program Committee, 9th International Conference on Information Technology and Applications in Biomedicine, Larnaca, Cyprus, November 5-7, 2009.
- Organizing Committee, 19th International Conference on Artificial Neural Networks, Limassol, Cyprus, September 14-17, 2009.
- Program Committee, OCT session, European Conference on Biomedical Optics, Munich, Germany, June 14-19, 2009.
- Program Committee, IEEE International Workshop on Imaging Systems and Techniques, Chania, Crete, Greece, Septermber 10-12, 2008.
- Program Committee and Session Chair, OCT session, European Conference on Biomedical Optics, Munich, Germany, June 17-21, 2007.
- Program Committee and Session Chair, OCT session, European Conference on Biomedical Optics, Munich, Germany, June 13-16, 2005.
- Session Chair, II EFOMP Mediterranean Conference on Medical Physics, Limassol, Cyprus, April 28-30, 2004.

Academic Activities

"Endiktis" Publication Committee. Member, 2008-2012.

- University of Cyprus Public Relations Committee, Member, 2002-2006.
- University of Cyprus Ad Hoc Bioethics Committee, Member, 2002-2006.
- University of Cyprus International Relations Committee, Member, 2002-Dec. 2003.
- University of Cyprus Rules and Regulations Committee, Member, 2002-Dec. 2003
- University of Cyprus Ad Hoc E- Learning Committee, Member, 2003-2004.
- Dept. of Electrical & Computer Engineering, University of Cyprus, Director of Academic Affairs, Sept. 2003-June 2004

Dept. of Electrical & Computer Engineering, University of Cyprus, Vice Chairman, Sept. 2013-May 2016

Other Activities

- Cyprus National Contact Point for FP 6 Thematic Priority 3 (Nanotechnology, Manufacturing & Production), 2003-2004
- Harvard-MIT Div. Of Health Science and Technology PhD Admissions Committee, 1997-2000
- Vice President and President of the Panhellenic Students Association at the University of Texas at Austin, 1992–1993 & 1994-1995

HONORS AND AWARDS

Awards

- Best Student Presentation (2nd Place), A. Kyriakides, K. Hadjigeorgiou, E. Kastanos, C. Pitris,
 "Classification of Raman Spectra using Support Vector Machines," 9th International Conference on Information Technology and Applications in Biomedicine, November 5-7, 2009, Larnaca, Cyprus.
- Best Student Presentation (Finalist), E. Bousi, A. Kartakoullis, C. Pitris, "Spectral Analysis for Scatterer Estimation in Optical Coherence Tomography Images," 9th International Conference on Information Technology and Applications in Biomedicine, November 5-7, 2009, Larnaca, Cyprus.
- Honorable mention (4th place), Cyprus Entrepreneurship Competition 2008 for the business plan
 "UroRaman, Next Generation Urinary Track Infection Diagnosis" by C. Chimonas, C. Christodoulou, N,
 Mouzouris, C. Christodoulou. (Senior undergraduate students. Advising and original product idea by
 C. Pitris.)

- Honorable mention (4th place), Cyprus Entrepreneurship Competition 2008 for the business plan
 "NutriSpec" by C. Moustakas, M. Christodoulou, M. Constantinou, M. Panayidou, S. Vassiliou. (Senior undergraduate students. Advising and original product idea by C. Pitris.)
- First Prize, Cyprus Entrepreneurship Competition 2005 for the business plan "SelaScope, Next Generation Endoscopy" by A. Odysseos, C. Pitris, L. Economides, S. Stelikou.
- Third prize, Research Promotion Foundation national competition for undergraduate research (PROFIT), 2005 for the thesis "Automated quantitative evaluation of histologic images from normal and dysplastic nevi" by A. Kyriakidou.
- USA Dept. of Energy Sponsored Fellowship, Wellman Laboratories of Photomedicine, Harvard Medical School, 2000-2001.

Dick Poortvliet Best Student Presentation Award, Medicon 98, June 14-17, 1998.

A. Martinos Fellow in Medical Engineering and Medical Physics, MIT, 1999-00.

A. Martinos Fellow in Medical Engineering and Medical Physics, MIT, 1997-98.

E. S. Webster Fellow in Medical Engineering and Medical Physics, MIT, 1995-96.

American Society of Lasers in Medicine and Surgery Travel Grant, 1995.

Cyprus-America Scholarship Program, AISD, Washington, DC, 1989-1993.

Honors

European Research Council Starting Grant 2007, Second round short-list (top 5% out of more than 9000). Engineering Scholar, The Univ. of Texas at Austin, Fall 90-Spring 93.

PUBLICATIONS AND PATENTS

SUMMARY

| Books | | Patents |
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| Publisher/Reviewed: | 1 | • USA: 8 |
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| Peer-Reviewed Proceedings and | | • h-index: 36 |
| Abstracts: | 139 | (as of August 2022) |

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