Julius Georgiou

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EDUCATION

Imperial College of Science, Technology and Medicine, University of London, U.K.
Degree: Master of Engineering in Electrical and Electronic Engineering
Thesis Title: Analogue Modeling of the Nerve Axon Membrane
Department: Electrical and Electronic Engineering
Years: 1994-1998

Imperial College of Science, Technology and Medicine, University of London, U.K.
Degree: Doctor in Philosophy (PhD)
Thesis Title: Micropower Electronics for Neural Prosthetics
Department: Electrical and Electronic Engineering
Years: 1998-2003

RESEARCH AND TEACHING INTERESTS

Research Interests

Biomedical Circuits and Systems, bioinspired electronic systems, low-power mixed-signal ASICs, radiation tolerant electronics, sensors and related systems, electronic prosthetics, medical instrumentation.

Teaching Interests

Analog/Digital Circuit design and Instrumentation (including MEMS design). The aim here is to provide students with fundamental skills required to enable the start of an international design services industry and well as to provide the foundations to create a high-tech industry in Cyprus.

EMPLOYMENT

2015-to date: Associate Professor, ECE Department, University of Cyprus.

2009-2015: Assistant Professor, ECE Department, University of Cyprus.

2005-2009: Lecturer, ECE Department, University of Cyprus.
Contributing to the growth and visibility of the Department at the University of Cyprus as well as working on the establishment of a research laboratory in the area of mixed-signal integrated system design and sensors.

2004-2005: Postdoctoral Research Fellow, Johns Hopkins University, USA
Worked with Prof Andreas Andreou in the Sensory Communication and Microsystems Laboratory on the development of neuromorphic systems with the use of an experimental 3-D technology, provided by MIT Lincoln Labs. The objective of the project was to develop and construct a prototype imager/ image transceiver with pixel-level parallel feature extraction.

2001-2003: Head of Design, Micropower Division, Toumaz Technology Ltd., U.K.
Being one of the first employees of Toumaz Technology gave me the opportunity to interact with customers, manage small design teams and continue my research activities, through an honorary research position at Imperial College. This enabled me to lecture a 4th year and M.Sc course, in addition to co-supervising postgraduate students at Imperial College, who were sponsored by Toumaz.

RESEARCH GRANTS

External Funding

Total External Funding: € 1,545,058 (~US$ 1,958,442)

Mar 15-Oct 15, "An Ultra-low-Power Bioinspired Microfluidic Gyroscope –Phase II", €20,000, MED-EL Elektromedizinische Geräte GmbH, Principle Investigator.

Dec 14-Dec 18, ~ €129,000/year "Memristors-Devices, Models, Circuits, Systems and Applications (MemoCiS)", COST Action IC1401, Action Proposer and Management Committee Chair.

Oct 11-April 14, "Development of Rad Hard non-volatile Flash Memories for Space Applications", €134,000 of €1M, Seventh EU Framework Program, Co-Principle Investigator.

Dec 12-Aug 14, "An Ultra-low-Power Bioinspired Microfluidic Gyroscope – Phase I", €36,480, MED-EL Elektromedizinische Geräte GmbH, Principle Investigator.

Nov 10-Oct 13, "Memristors for Bioinspired Circuit Design", €104,840 Cyprus Research Promotion Foundation, Project Coordinator.

Sept 10-Aug 14, "KIOS Research Center for Intelligent Systems and Networks", €137,500 of €1.1M Cyprus Research Promotion Foundation, Co-Principle Investigator.

Mar 09-Mar 12, "Acoustic Scene Analysis for Detecting Living Entities", €649,760 of €2.65M Seventh EU Framework Program, Co-Principal Investigator.

Dec 08- Dec 11, "Monitoring of Awareness During Anaesthesia", €134,856 Cyprus Research Promotion Foundation, Project Coordinator.

Feb 06- May 07 "A Biomimetic Micro-Imager for Neural Vision Systems", €29,300 Cyprus Research Promotion Foundation, Principal Investigator.

Dec 05-Dec 08, "Towards a MEMS Based Vestibular Implant for Balance Restoration", €169,322 Cyprus Research Promotion Foundation, Principal Investigator.

Internal Funding

Total Internal Funding: € 161,400 (~US$ 211,466)

May 10-May 13, "Improving the Performance of Hybrid Photovoltaic/Thermal Solar Systems", €76,000

Feb 06- Feb 08, "Start-up funding for VLSI laboratory", € 85,400 from UCY

TEACHING EXPERIENCE

Imperial College London

E4.17/AO4 – High Performance Analogue Electronics (2002)

This is a dual-level 4th year / MSc course in advanced electronic circuit techniques with emphasis on system-level design for wireless receiver architectures. It covered noise analysis, low-noise design, CMOS and BJT linearization, integrate-continuous time filters, analogue mixers and multipliers and integrated oscillators.
http://www3.imperial.ac.uk/electricalengineering/internal/curriculum

Johns Hopkins University

520/580.725 – Medical Microsystems (Guest Lecturer -2004)

I was invited to give a few lectures on implantable stimulators and cochear implants as contributions to this course that was given by Prof Andreas Andreou and Prof NitishThakor of the ECE Dept and Biomedical Engineering Dept respectively.
http://www.ece.jhu.edu/Graduate/grad_desc.shtml

University of Cyprus

ECE202 – Principles of Microelectronic Devices

This is an introductory course to Microelectronic Devices focused on the essentials that an engineer requires to understand the underlying principles of device operation.
http://www.ece.ucy.ac.cy/courses/ece202/index.html

ECE305 – Electronic Devices and Circuits II

This is an electronics course given to 3rd year EE students, which looks at secondary effects in MOS devices, single-stage amplifiers, differential amplifiers, current mirrors, frequency response, noise, feedback, op-amp design, stability and compensation, and reference circuits.

http://www.eng.ucy.ac.cy/ece305/index.html

ECE306 –Electronic Circuits Laboratory

In this laboratory students initially conduct experiments with discrete components to illustrate their limitations. The rest of the course involves using the skills acquired in ECE 305 to design and layout, in the Cadence Environment, a circuit in a commercially available process (AMS 0.35u). In 2006 the best two designs were fabricated through sponsorship from Cyprus Telecom.
http://www.ece.ucy.ac.cy/courses/ece306

ECE665 –Instrumentation and Sensors

This is a graduate level course that covers basic measurement theory, sensor principles, MEMS sensors, signals and noise, amplifiers, signal connections and shielding, data converters and collection and safety in medical instrumentation.
http://www.ece.ucy.ac.cy/courses/ece473X665/index.html

ECE659 – VLSI Design

This is a graduate level elective digital circuit design class, with particular emphasis on both circuit and systems perspective. The course material is reinforced with lab work within the Cadence design environment.
http://www.ece.ucy.ac.cy/courses/ece659/index.html

RESEARCH GROUP

Postdoctorate Researchers

1. Panayiota Demosthenous, "Mixed-signal Electronic Design".

Completed PhD Students

1. Christoph Beck, "Accident and Emergency Center Intelligent Monitoring Systems", (May 2016).
2. Charalambos Andreou "High-performance, Low-Power Integrated Reference Circuits and Reference Circuits for Space Applications", (May 2015)
3. Panayiota Demosthenous "A Fluoroscopic Cancer Screening Capsule For The Small Intestine", Feb 2015- Currently postdoc at UCY.
4. Garreau Guillame "Acoustic scene analysis for detecting living entities", June 2014 – Currently employed at Johns Hopkins University, USA.

International Interships/Visitors at Holistic Electronics Research Laboratory

1. Stavros Stavrinides	Visiting Faculty	Sept 2012 – June 2013
2. Joe Lin	Placement	July-Aug 2010 (from Johns Hopkins, USA)
3. Cyrille D'Urbal	Master Thesis -	May-Oct 2010 (from Grenoble INP – MINATEC)
4. Charalambos Andreou	Summer Intern-	July-Sept 2007 (from Grenoble INP – MINATEC)

Alumni

1. Nicoletta Nicolaou,	postdoctoral researcher	Mar 2007- Jun 2014
2. Adrian Rominski	postdoctoral researcher	Sept 2011-Dec 2012
3. Horacio Rostro-Gonzalez	postdoctoral researcher	Feb 2011-Feb 2012
4. Constantinos Hadjistassou	postdoctoral researcher	May 2010-May 2013
5. Nikolaos Archondas	postdoctoral researcher	May 2009-May 2011
6. Philippe Pouliquen	postdoctoral researcher	May 2009-Feb 2012
7. Timothy Constandinou,	postdoctoral researcher	Dec. 2005- Dec 2009
8. Andrew Cassidy	researcher	May 2009 – Jan 2011
9. Guillermo Stuarts	researcher	May 2009 – May 2010
10. Evdokia Pilavaki	researcher	Jan 2013 – July 2013
11. Yiannis Pahitas	researcher	July 2013.- Feb 2014
12. Evripides Kyriakides	researcher	Oct 2010 – Apr 2014

CONSULTING, PROPOSAL EVALUATIONS AND INDUSTRIAL EXPERIENCE

- PLSense Ltd - Low-power subthreshold analog circuit design (consulting)
- Epic Biosonics Inc. - Cochlear Implant development
- ESA / SEA - Subthreshold circuits for space applications (consulting)
- QinetiQ - Low-power passive sonar systems (consulting)
- Applied Bionics - Subthreshold hearing aids (consulting)
- Cerbomed GmBH - Low-power design for vagus nerve stimulation (consulting)
- European Commission, Information Society & Media Directorate Generale, Future and Emerging Technologies Programme – Expert reviewer for projects RAMP & CAVIAR.
- Swiss National Science Foundation – Expert reviewer
- KU Leuven Industrial Research Fund – Expert advisor
- The Research Foundation Flanders (FWO) – Expert advisor
- Natural Sciences and Engineering Research Council of Canada (NSERC)- Expert reviewer

PROFESSIONAL ACTIVITIES

Memberships

Institute of Electrical and Electronic Engineers (IEEE),
Senior Member: 2008
Member: 1999

Service at IEEE

IEEE BioCAS Technical Committee Chair (2016-2018)
IEEE BioCAS Technical Committee Chair Elect (2014-2016)
IEEE BioCAS Technical Committee Secretary (2012-2014)
IEEE BioCAS Conference 2010, Cyprus, Organizing Committee - General Chair
IEEE BioCAS Conference 2008, USA, Organizing Committee - Special Session Chair
IEEE BioCAS Conference Steering Committee Member (2009-2012)
IEEE ISCAS 2010 – Best demo award judge
IEEE CAS Sensory Systems Technical Committee (2011-present)
IEEE CAS Society, BioCAS Technical Committee member (2002-present)
IEEE CAS Society, Analog Signal Procession Technical Committee member since 2001

Editorial Roles

IEEE TBioCAS Associate Editor, (2011-present)
Frontiers in Neuromorphic Engineering Journal Associate Editor (Jan 2011- present)
IEEE TBioCAS Journal Guest Editor, 2010-2011

Reviewer for:

IEEE Proceedings, IEEE Trans. on Circuits and Systems, IEEE Trans. on Neural Networks, IEEE Trans. On Nuclear Science, IEE Electronic letters, IEEE Sensors Journal, IEEE Trans. In Biomedical Engineering, IEEE Trans. on Biomedical Circuits and Systems, IEEE Trans. in Electron Devices, ASP Journal of Low Power Electronics, Elsevier Journal of Neuroscience Methods, Nanoscale Research Letters, IOP Bioinspiration and Biomimetics Journal, Elsevier Microelectronics Journal, IEEE Journal on Emerging and Selected Topics in Circuits and Systems, Applied Physics Letters.

Other Workshops/ Conferences:

- General Chair of International Conference on Memristive Systems (MEMRISYS 2015), 8-10 November 2015, Paphos Cyprus, **General Chair** and main organizer
- Local organizer of one of the STIMESI MEMS Workshops (http://www.stimesi.org) at University of Cyprus. This FP6 sponsored program aims to "stimulate European universities and research institutes to adopt MEMS and SiP technologies", April 21st-24th, 2008.

SERVICE WITHIN UCY

- Europractice Representative for UCY (2005-present)
- UCY Patent Committee (2012- present)

- Member of Departmental IT committee (2008-2012) (2013-2014)
- ECE departmental representative for UCY Library (2006-2010)
- Member of ECE Dept "Postgraduate Program Committee" (2006-2008)
- Undergraduate Committee (2013-2014)
- Chair of ECE Dept "Office Space and Lab Allocation Committee" (2006-2008)

SCHOLARSHIPS / PRIZES / AWARDS

- IEEE CAS Society Distinguished Lecturer (2016-2018)
- Received the 2015 ONE Award from the Republic of Cyprus President for Research
- Int. Sym. on Circuits and Systems (ISCAS) 2011 Sensory Systems Best Paper Award
- Winner of Advanced Category of 2008 STIMESI MEMS European-wide Design Contest
- Int. Conf. of Biomedical Electronics and Devices (BIODEVICES) 2008 Best Paper Award
- Johns Hopkins University Fellowship
- Doctoral Dissertation Commendation by Armstrong Prize Committee
- CVCP Overseas Research Students Award for 3 years
- Electrical and Electronic Eng Dept, Imperial College 3 year departmental scholarship for Ph.D.
- Nicholas Battersby Prize for MEng final year project.
- Full four year Commonwealth scholarship for studying at Imperial College,
- Full six-year scholarship for "The English School Nicosia"

PHD DISSERTATION REFEREE (BEYOND UNIVERSITY OF CYPRUS)

- Karim El-Laithy : Universität Leipzig, Germany, 2011: advisor Prof Martin Bogdan

PUBLICATIONS

Refereed Journal Papers

1. C. Beck and **J.Georgiou**, "A Wearable, Multimodal, Vitals Acquisition Unit for Intelligent Field Triage", IET Healthcare Technology Letters, *in Press*, 2016.
2. C. Andreou and **J. Georgiou,** "A 0.75V, 4μW, 15ppm°C, 190°C Temperature Range, Voltage Reference", International Journal of Circuit Theory and Applications, 11th August 2015. DOI: 10.1002/cta.2122
3. P. Demosthenous, C. Pitris and **J. Georgiou**, "Infrared fluorescence-based Cancer Screening Capsule for the Small Intestine", IEEE Transactions on Biomedical Circuits and Systems, 2015, DOI:10.1109/TBCAS.2015.2449277
4. K.N. Hageman, Z.K. Kalayjian, F. Tejada, B.Chiang, M.A. Rahman, G.Y. Fridman, C. Dai, P.O. Pouliquen, **J. Georgiou**, C.C. Della Santina, and A.G. Andreou, "A CMOS Neural Interface for a Multichannel Vestibular Prosthesis", IEEE Transactions on Biomedical Circuits and Systems, 2015, DOI:10.1109/TBCAS.2015.2409797
5. E. Kyriakides and **J. Georgiou**, "A compact, low-frequency, memristor-based oscillator", International Journal of Circuit Theory and Applications, 8th Oct. 2014, DOI: 10.1002/cta.2030.
6. N. Nicolaou and **J. Georgiou**, "The Study of EEG Dynamics During Anesthesia with Cross-Recurrence Rate", Cureus 6(8): e195, August 2014, doi:10.7759/cureus.195
7. C. Andreou, Y. Pahitas and **J. Georgiou**, "Bio-inspired micro-fluidic angular-rate sensor for vestibular prostheses", Sensors 2014, 14, 13173-13185; July 2014, doi:10.3390/s140713173
8. L. Shestopalova, T. M. B¨ohm, A. Bendixen, A. G. Andreou, **J. Georgiou**, G. Garreau, B. Hajdu, S. L. Denham and I. Winkler, "Do Audio-Visual Motion Cues Promote Segregation of Auditory Streams?," Frontiers in Neuroscience, Vol. 8, No. 64, 1-11, April 2014.
9. N. Nicolaou and **J. Georgiou**, "Spatial Analytic Phase Difference of EEG activity during anesthetic-induced unconsciousness", Clinical Neurophysiology, February 2014, DOI: 10.1016/j.clinph.2014.02.011
10. N. Nicolaou and **J. Georgiou**, "Global Field Synchrony during general anaesthesia", British Journal of Anaesthesia, 29th Oct 2013, DOI:10.1093/bja/aet350

11. S. Dura-Bernal, G. Garreau, **J. Georgiou**, A.G.Andreou, S.L. Denham and T. Wennekers, "Multimodal Integration Of Micro-Doppler Sonar And Auditory Signals For Behavior Classification With Convolutional Networks", International Journal of Neural Systems, Vol.23, No. 5 (2013)(15 pages), DOI: 10.1142/S0129065713500214
12. N. Nicolaou and **J. Georgiou,** "Neural Network based classification of anesthesia/awareness using Granger Causality features", Journal of Clinical EEG and Neuroscience, July 2013, http://dx.doi.org/10.1177/1550059413486271
13. A. S. Cassidy, **J. Georgiou** and A.G. Andreou, "Design of silicon brains in the nano-CMOS era: Spiking neurons, learning synapses and neural architecture optimization", Neural Networks, Available online 6 June 2013, ISSN 0893-6080, http://dx.doi.org/10.1016/j.neunet.2013.05.011.
14. T. M. Bőhm, L. Shestopalova, A. Bendixen, A. G. Andreou, **J. Georgiou**, G. Garreau, P. Pouliquen, A. Cassidy, S. L. Denham and I. Winkler, "The role of perceived source location in auditory stream segregation: Distance affects sound organization, common fate does not!", Learning & perception, 5(2):55-72, June 2013, http://dx.doi.org/10.1556/LP.5.2013.Suppl2.5
15. D. Welch, **J. Georgiou** and J. Blain Christen, "Fully-differential current-mode MEMS dual-axis optical inclination sensor", Sensors and Actuators A: Physical, Vol. 192, pp. 133-139, April 2013, doi:10.1016/j.sna.2012.12.001.
16. C. Hadjistassou, E. Kyriakides and **J. Georgiou**, "Designing High Efficiency Concentrator Thermoelectric Generators", Energy Conversion and Management, Vol.66, pp165-172, February 2013; DOI: http://dx.doi.org/10.1016/j.enconman.2012.07.030
17. E. Kyriakides, S. Carrara, G. De Micheli and **J. Georgiou**, "A low-cost, CMOS compatible TaOx hemi-memristor for neuromorphic circuits", IEE Electronics Letters, Vol. 48, No. 14, pp. 1451-1452, November 2012.
18. **J. Georgiou**, E. Kyriakides and C. Hadjistassou, "NiTi Smart Alloys for Memristors with Multi-time-scale Volatility," IEE Electronics Letters, Vol. 48, No. 14, pp. 877-879, July 2012.
19. N. Nicolaou, S. Houris, P. Alexandrou, and **J. Georgiou**, 'Permutation Entropy: a reliable measure for automatic monitoring of anesthetic depth during surgery?', Engineering Intelligent Systems Journal, Special Issue: Timely developments in Artificial Intelligence Applications, L. Iliadis, I. Maglogiannis (eds.), 20(1/2):1-10, 2012.
20. N. Nicolaou, S. Hourris, P. Alexandrou and **J. Georgiou**, "EEG-based Automatic Classification of 'Awake' versus 'Anesthetized' State in General Anesthesia Using Granger Causality", PLoS ONE Vol. 7, Issue 3, March 2012, doi:10.1371/journal.pone.0033869
21. C. M. Andreou, S. Koudounas and **J. Georgiou**, "A Novel wide-temperature-range, 3.9 ppm/°C CMOS Bandgap Reference Circuit", IEEE Journal of Solid-State Circuits, Vol. 47, No. 2 , pp. 574 – 581, February 2012
22. N. Nicolaou and **J. Georgiou**, "Detection of epileptic electroencephalogram based on Permutation Entropy and Support Vector Machines", Expert Systems with Applications, 39(1) Jan 2012, Available online 19 July 2011, ISSN 0957-4174, DOI: 10.1016/j.eswa.2011.07.008. (http://www.sciencedirect.com/science/article/pii/S0957417411009705)
23. N. Nicolaou and **J. Georgiou**, "The Use of Permutation Entropy to Characterise Sleep Encephalograms", Journal of Clinical EEG and Neuroscience, Vol. 42, No. 1, pp 24-28, January 2011
24. T. Constandinou and **J. Georgiou**, "A Micropower Tilt Processing Circuit", IEEE Transactions on Biomedical Circuits and Systems", Vol.3, Issue 6, pp 363-369, December 2009.
25. T. Constandinou and **J. Georgiou**, "A Micropower Arcsine Circuit for Tilt Processing", IEE Electronics Letters, Vol. 44, No. 23, pp. 1336-1338, November 2008.
26. T. Constandinou, **J. Georgiou** and C. Toumazou, "Towards an Integrated, Fully-Implantable Vestibular Prosthesis for Balance Restoration", Journal of Advances in Science and Technology, Vol. 57, pp 210-215, August 2008.
27. **J. Georgiou**, "An Ultra-compact, Low-power Reference Circuit/Dosimeter for Space Environments", IEEE Transactions on Nuclear Science, Vol. 55, No. 4. pp 2385-2388, August 2008.

28. T.G. Constandinou, **J. Georgiou**, C. Toumazou, "A Partial-Current-Steering Biphasic Stimulation Driver for Neural Prostheses," IEEE Transactions on Biomedical Circuits and Systems, Vol. 2, No. 2, p106-113, June 2008
29. T. Constandinou and **J. Georgiou**, "Micro-optoelectromechanical Tilt Sensor", Journal of Sensors, Vol. 2008, Article ID 782764, 7 pages, April 2008
30. T.G. Constandinou, **J. Georgiou**, C. Toumazou, "Micropower Front-end Interface for Differential-Capacitive Sensor Systems," IEE Electronics Letters, Vol. 44, pp. 470-472, March 2008.
31. **J. Georgiou** and A.G. Andreou, "Address-Data Event Representation (ADER) for Communication in Multichip Neuromorphic System Architectures", IEE Electronics Letters, Vol. 43, Issue 14, pp 767-769, July 2007.
32. **J. Georgiou** and A.G. Andreou, "High-speed, address-encoding arbiter architecture", IEE Electronics Letters, Vol. 42, pp 170-171, February 2006
33. **J. Georgiou** and C. Toumazou ,"A 126-μW Cochlear Chip For a Totally Implantable System," IEEE Journal of Solid-State Circuits, Vol. 40 , No. 2 , pp. 430 – 443, February 2005
34. T.G. Constandinou, **J. Georgiou**, C. Toumazou, "Nano-power Mixed-signal Tunable Edge-detection Circuit for Pixel-level Processing in Next Generation Vision Systems," IEE Electronics Letters, Vol. 39, No. 25, pp. 1774-1775, December 2003.
35. C. Toumazou, **J. Georgiou** and E.M. Drakakis, "Current-mode analogue circuit representation of Hodgkin and Huxley neuron equations", IEE Electronics Letters Vol. 34, No. 14, pp. 1376 – 1377, July 1998

Other Journal Papers

1. **J. Georgiou** and A. G. Andreou, "Guest Editorial—Special Issue on Selected Papers From BioCAS 2010," IEEE Transaction on Biomedical Circuits and Systems, vol. 5, no. 5, pp. 401–402, 2011.

Refereed International Conference Proceedings Papers

1. D. Biolek, S. Carrara, E. Chicca, F. Corinto, J. Georgiou, B. Linares-Barranco, T. Prodromakis, S. Spiga and R. Tetzlaff, "Pushing the Frontiers of Memristive Devices to Systems (EU COST Action IC1401)", 18th Mediterranean Electrotechnical Conference – Melecon 2016, Limassol, Cyprus, April 18-20, 2016.
2. C. Beck and J. Georgiou, "A Body-worn multi-parameter monitoring platform for human vital signs acquisition", XIV Mediterranean Conference on Medical and Biological Engineering and Computing (MEDICON 2016), Paphos, Cyprus, March 31st –April 2nd, 2016.
3. C. Beck and **J. Georgiou**, "A Wearable, Multimodal, Vitals Acquistion Unit for Intelligent Field Triage", 2016 IEEE Int'l Symposium on Circuits and Systems (ISCAS), pp.1530-1533, Montreal, Canada, May 22-25, 2016.
4. P. Demosthenous and **J. Georgiou**, "An Ingestible, NIR-Fluorometric, Cancer-Screening Capsule" Proc. of 37th Annual Int. Conf. of IEEE Engineering in Medicine and Biology Society (EMBC'15), pp2143-2146, 25-29th Aug, Milan, Italy
5. P. Demosthenous and **J. Georgiou**, "A Fluorescence Based Endoscopic Microcancer Detection Capsule", 2015 IEEE Int'l Symposium on Circuits and Systems (ISCAS), pp.1626-1629, Lisbon, Portugal, May 24-27, 2015.
6. C.M. Andreou , A. Paccagnella, D. M. Gonzalez-Castano, F. Gomez, V. Liberali, A.V. Prokofiev, C. Calligaro, A. Javanainen, A. Virtanen, D. Nahmad and **J. Georgiou**, "A Subthreshold, Low-Power, RHBD Reference Circuit, for Earth Observation and Communication Satellites", 2015 IEEE Int'l Symposium on Circuits and Systems (ISCAS), pp.2245-2248, Lisbon, Portugal, May 24-27, 2015.
7. E. Demarchou, **J. Georgiou**, N. Nicolaou and T. Constandinou, "Anesthetic-induced changes in EEG activity: a graph theoretical approach", BioCAS 2014, pp. 45-48, Lausanne, Switzerland, 2014.

8. P. Demosthenous and **J. Georgiou**, "Towards a Fluoroscopic Cancer Screening Capsule for the Small Intestine" Proc. of 36th Annual Int. Conf. of IEEE Engineering in Medicine and Biology Society (EMBC'14), pp3122-3125, 26-30th Aug, Chicago, USA.
9. C. M. Andreou, Y. Pahitas, E. Pilavaki and **J. Georgiou**, "Bio-Mimetic Gyroscopic Sensor for Vestibular Prostheses", BioCAS 2013, pp.17-20, 31st Oct – 2nd Nov, Rotterdam, Netherlands
10. N. Nicolaou and **J. Georgiou,** "Towards Automatic Sleep Staging via Cross-Recurrence Rate of EEG and ECG Activity" BioCAS 2012, pp 198-201, 31st Oct – 2nd Nov, Rotterdam, Netherlands.
11. N. Nicolaou and **J. Georgiou**, "Autoregressive model order estimation criteria for monitoring awareness during anaesthesia", AIAI2013, 9th Int. Conf. on Artificial Intelligence Applications and Innovations, pp. 71-80, Sept 30th-Oct 2nd,Paphos, Cyprus.
12. N. Nicolaou and **J. Georgiou**, "Monitoring Depth of Hypnosis under Propofol General Anaesthesia: Granger Causality and Hidden Markov Models ", Neurotechnix 2013, 18th-20th Sept 2013,Vilamoura, Portugal.
13. C. M. Andreou and **J. Georgiou**, "An All-Subthreshold, 0.75V Supply, 2ppm/°C, CMOS Voltage Reference", 2013 IEEE International Symposium on Circuits and Systems (ISCAS 2013), May 19th -23rd, 2013, Beijing, China.
14. G. Garreau, E. Proxenou, A. G. Andreou and **J. Georgiou**, "Person Localization Through Ground Vibrations using a Sand-scopion inspired Spiking Neural Network", 47th Annual Conference on Information Sciences and Systems (CISS 2013), Mar 20th-22nd, 2013, Baltimore, USA.
15. P. Demosthenous and **J. Georgiou**, "Acceleration-dependent Sampling for Ingestible Endoscopic Imaging Capsule", Proc. of the IEEE Biomedical Circuits and Systems Conference (BioCAS'12), 28th -30th Nov 2012, Hsinchu, Taiwan. DOI:10.1109/BioCAS.2012.6568556
16. G. Garreau, N. Nicolaou and **J. Georgiou**, "Individual Classification Through Autoregressive Modelling of Micro-Doppler Signatures", Proceedings of the IEEE Biomedical Circuits and Systems Conference (BioCAS'12), pp. 312-315, 28th -30th Nov 2012, Hsinchu, Taiwan.
17. **J. Georgiou** and E. Kyriakides, "Memristors for Energy-Efficient, Bioinspired Processing, Proceedings of the 2012 IEEE 27th Convention of Electrical and Electronics Engineers in Israel, 14th-17th Nov 2012, Eilat, Israel.
18. C. Hadjistassou, **J. Georgiou**, and E. Kyriakides, "Improving vehicle fuel economy using
19. thermoelectric devices," Power Options for the Eastern Mediterranean Region (POEM 2012), Limassol, Cyprus, pp. 1-6, Nov. 2012.
20. N. Nicolaou, A. Dionysiou and **J. Georgiou** "Temporal dynamics of EEG during anesthesia", 2012 IEEE 12th International Conference on Bioinformatics & Bioengineering (BIBE 2012), 11th-13th Nov 2012, Larnaca, Cyprus.
21. E. Kyriakides, C. Hadjistassou and **J. Georgiou**, "A New Memristor based on NiTi Smart Alloys", 2012 IEEE International Symposium on Circuits and Systems (ISCAS 2012), pp.1403-1406, May 20th -23rd, 2012, Seoul, Korea.
22. H. Rostro-Gonzalez, G. Garreau, A. Andreou, **J. Georgiou**, J.H. Barron-Zambrano and C. Torres-Huitzil, "An FPGA-based approach for parameter estimation in spiking neural networks", 2012 IEEE International Symposium on Circuits and Systems (ISCAS 2012), pp.1403-1406, May 20th -23rd, 2012, Seoul, Korea.
23. C. M. Andreou and **J. Georgiou**, "A 200°C temperature range, 13.7ppm/°C CMOS Bandgap Reference Circuit with Curvature Compensation", CDNLive, Cadence User Conference 2012, 14th-16th May, Munich, Germany.
24. G. Garreau, C. M. Andreou, A. G. Andreou and **J. Georgiou** / S. Dura-Bernal, T. Wennekers and S. Denham, "Gait-Based Person and Gender Recognition Using Micro-Doppler Signatures" Proceedings of the IEEE Biomedical Circuits and Systems Conference (BioCAS'11), 10th -12th Nov 2011, San Diego, USA.
25. N. Nicolaou and **J. Georgiou** / S. Hourris and P. Alexandrou "Cross-Recurrence Rate for Discriminating 'Concious' and 'Unconcious' State in Propofol General Anesthesia", Proceedings of the IEEE Biomedical Circuits and Systems Conference (BioCAS'11), 10th -12th Nov 2011, San Diego, USA.

26. S. Dura-Bernal, G. Garreau, C. Andreou, A. Andreou, **J. Georgiou**, T. Wennekers and S. Denham, "Human action categorization using ultrasound micro-Doppler signatures", 2nd International Workshop on Human Behaviour Understanding, pp.18-29, 16th Nov, 2011, Amsterdam, Netherlands.
27. N. Nicolaou, S. Houris, P. Alexandrou and **J. Georgiou**, "Permutation Entropy for discriminating of 'conscious' Vs 'unconscious' state in of general anesthesia", 12th Engineering Applications of Neural Networks Conference/ 7th Artificial Intelligence Applications and Innovations Conference, 15th-18th Sept, 2011, Corfu, Greece.
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Other Conference/Workshop Papers

1. E. Demarchou, N. Nicolaou and **J. Georgiou**, "Discriminating between wakefulness and anesthesia: a graph theoretical study", 7th Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus 15th July, 2014
2. **J. Georgiou**, "Smart Alloy Memristors and the Need for Multiscale Volatility", Workshop on Memristor-based Systems for Neuromorphic Applications, 16th-17th Sept, 2013, Turin, Italy.
3. N. Nicolaou and **J. Georgiou**, "Non-linear coupling of EEG and ECG signals during sleep", 6th Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus 9th July, 2013
4. A. Kyriakides, Andreas Spanias, **J. Georgiou** and Costas Pitris, "Noise-Robust Classification using Rank Order Kernels", 6th Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus 9th July, 2013

5. N. Nicolaou, S. Houris, P. Alexandrou, and **J. Georgiou**, `Monitoring awareness during anaesthesia' (in Greek), 12th Congress of Anesthesiology and Intensive Medicine 2012, Thessaloniki, Greece, 27-30 Sept, 2012.
6. **J. Georgiou**, "Bioinspired Acoustic Processing Hardware", Making Sense of Sound: Workshop on Sounds and Sound Processing in Natural and Artificial Systems, 20/21 February 2012, Plymouth UK
7. H. Rostro Gonzalez and **J. Georgiou**, "A Silicon Auditory Pathway", Making Sense of Sound: Workshop on Sounds and Sound Processing in Natural and Artificial Systems, 20/21 February 2012, Plymouth UK
8. G. Garreau and **J. Georgiou**, "Ultrasonic Micro-Doppler Signatures for Object Recognition", Making Sense of Sound: Workshop on Sounds and Sound Processing in Natural and Artificial Systems, 20/21 February 2012, Plymouth UK
9. G. Garreau, N. Nicolaou and J. Georgiou, "Autoregressive Modelling for Person Classification Using Micro-Doppler Signatures", 5th Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus 10th July, 2012
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11. N. Nicolaou, S. Houris and **J. Georgiou**, "Discrimination of 'awake' and 'anaesthetised' state in propofol general anaesthesia", 4th Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus 14th July, 2011
12. G. Garreau, C. M. Andreou, A. G. Andreou, Salvador Dura-Bernal, Thomas Wennekers, Sue Denham, and **Julius Georgiou**, "Gait-based Person And Gender Recognition Using Micro-Doppler Signatures", 4th Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus 14th July, 2011
13. N. Nicolaou, S. Houris and **J. Georgiou**, "The use of Granger causality for the characterization of bidirectional interactions of human brain activity during induction of general anaesthesia", 3rd Cyprus Workshop on Signal Processing and Informatics, Nicosia, Cyprus 15th July, 2010
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16. **J. Georgiou** and A.G. Andreou, "A Mixed Analog/Digital Asynchronous Processor for Network Models of Cortical Computation", Ninth International Conference on Cognitive and Neural Systems, May 18-21, 2005, Boston, USA.
17. **J. Georgiou** and A.G. Andreou, "An Asynchronous Cortical Processor in a 3D Semiconductor Technology", 3rd International Symposium on Nanomanufacturing, Nov 3-5, Limassol, Cyprus 2005.

Book Chapters

1. N. Nicolaou and **J. Georgiou**, "Autoregressive Model Order Estimation Criteria for Monitoring Awareness during Anaesthesia", Artificial Intelligence Applications and Innovations, Springer, ISBN 978-3-642-41141-0, DOI 10.1007/978-3-642-41142-7
2. N. Nicolaou, S. Houris, P. Alexandrou and **J. Georgiou**, "Permutation Entropy for Discriminating 'Concious' and 'Unconcious' State in General Anaesthesia", Engineering Applications of Neural Networks, Springer Boston, ISBN: 978-3-642-23956-4, pp280-288, Vol. 363, Url: http://dx.doi.org/10.1007/978-3-642-23957-1_32, Doi: 10.1007/978-3-642-23957-1_32
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Patents Granted

1. C. Della-Santina, A. G. Andreou, Z. Kalajian, G. Fridman, B. Chiang and **J. Georgiou**, "High-voltage CMOS Neuroelectronic Interface for Multichannel Vestibular Prosthesis", WO/2012/018631, PCT/US2011/045384, 26th July 2011.
2. C. Toumazou and **J. Georgiou**, "Reference Circuit", US 7,242,241, July 10th 2007.
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5. C. Toumazou and **J. Georgiou**, "Fully Implantable Cochlear Implant System and Electronic Circuits Therefor", WO/2002/089913, 14th November 2002.
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1. **J. Georgiou** and C. Andreou, "All-CMOS, Low-voltage, Wide-Temperature Range, Voltage Reference Circuit", PCT/US14/38659, 19th May 2014.
2. **J. Georgiou** and C. Andreou, "Hybrid MEMS Microfluidic Gyroscope", PCT/US13/58108, 4th Sept 2013.
3. **J. Georgiou** and C. Andreou, "All-CMOS, Low-voltage, Wide-Temperature Range, Voltage Reference Circuit", Application number 61825086, 19th May 2013.
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Invited/Keynote Talks

1. "Bio-electronics for Improved Quality of Life", International Conference on Modern Circuits and Systems Technologies (MOCAST 2016), Thessaloniki, Greece, May 12-14, 2016.
2. "Implementing the Hodgkin-Huxley Nerve Axon Model with Sub- threshold CMOS Transistors and Capacitors", 7th-9th Sept 2015, 10th SICC Int'l Workshop Topics in Nonlinear Dynamics, Turin, Italy.
3. "A Bioinspired System for Acoustic Scene Analysis", 31st Aug 2015, Italian Institute of Technology, Genova, Italy.
4. "Memristors: The Challenging Leap from Devices to Systems", 2014 CAS-FEST **Keynote Speaker**, 5th June 2014, Melbourne, Australia.
5. "A Bio-inspired System for Acoustic Scene Analysis", Mediterranean Acoustics Festival, 22nd April 2014, Limassol, Cyprus.
6. "Smart Alloy Memristors and the Need for Multiscale Volatility", Workshop on Memristor-based Systems for Neuromorphic Applications, 16th-17th Sept, 2013, Turin, Italy.
7. "Vestibular Implant: the next commercial bionic device?", 4th Annual NanoNetwork Workshop, 17th-19th June, 2013, Bergen, Norway.
8. "Electronics for Space", European Space Expo, 18th Nov 2012, Larnaca, Cyprus.
9. "Memristors for Energy-Efficient, Bioinspired Processing", IEEE 27th Convention of Electrical and Electronics Engineers in Israel, 14th-17th Nov 2012, Eilat, Israel
10. "Bioinspired Acoustic Processing Hardware", Making Sense of Sound: Workshop on Sounds and Sound Processing in Natural and Artificial Systems, 20/21 February 2012, Plymouth UK
11. "MEMS Devices for Vestibular Implants", Third STIMESI Workshop on MEMS and Microsystems Research and Teaching, Kaiserstejensky Palace, Prague, Czech Republic, 13 November 2009.
12. "Vestibular Implants: Reality or Science Fiction?", Pazmany Peter Catholic University, 30th September 2009.

13. "Neurostimulation of the Cochlea and the Auditory System", IEEE BioCAS 2007 Tutorials, November 27th-30th 2007, Montreal, Canada (Sponsored by CerboMed GmBH)
14. "An Analog, Fully Implantable Micropower, Log Domain Cochlear Prosthesis", IEEE ISCAS 2001 Tutorials
15. "An Analog, Fully Implantable Micropower, Log Domain Cochlear Prosthesis" for Cochlear Limited, 14 Lane Cove NSW 2066, Australia. 10th May 2001

Hobbies

1. Long distance running – Paphos Marathon 2016, 4:08:40 (6/3/2016)
2. Long distance Triathlon (2013- to date)
   K1 Man -Half Ironman, 1.9km swim, 90km cycle, 21.1km run – 6:08:19 (22/10/2015)
3. Long distance swimming – first Cypriot to swim across the English Channel
   Unassisted solo crossing of the English Channel in 10h 24min (10/8/03)
   Unassisted solo crossing of the English Channel in 14h 29min (4/9/03)
4. Scuba diving
   PADI Open Water Diver (since 2009)
5. Sailing
   Skipper/Owner of 39' Beneteau Oceanis sailboat (since 2006)

Julius Georgiou

University of Cyprus

Google Scholar

Citation indices	All	Since 2011
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Design of a one million neuron single FPGA neuromorphic system for real-time multimodal scene analysis A Cassidy, AG Andreou, J Georgiou Information Sciences and Systems (CISS), 2011 45th Annual Conference on, 1-6	41	2011
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Design of silicon brains in the nano-CMOS era: Spiking neurons, learning synapses and neural architecture optimization AS Cassidy, J Georgiou, AG Andreou Neural Networks 45, 4-26	34	2013
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Current-mode analogue circuit representation of Hodgkin and Huxley neuron equations C Toumazou, J Georgiou, EM Drakakis Electronics Letters 34 (14), 1376-1377	31	1998
A micropower front-end interface for differential-capacitive sensor systems TG Constandinou, J Georgiou, C Toumazou 2008 IEEE International Symposium on Circuits and Systems, 2474-2477	20	2008
An auto-input-offset removing floating gate pseudo-differential transconductor TG Constandinou, J Georgiou, C Toumazou Circuits and Systems, 2003. ISCAS'03. Proceedings of the 2003 International ...	19	2003
A neural implant ASIC for the restoration of balance in individuals with vestibular dysfunction TG Constandinou, J Georgiou, C Toumazou 2009 IEEE International Symposium on Circuits and Systems, 641-644	17	2009
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