



Curriculum Vitae

Kostas Marias

Dipl.Eng, M.Sc , Ph.D

**Associate Professor,
Technological Educational
Institute Of Crete**

SUMMARY PROFILE AND ACHIEVEMENTS

Kostas Marias is an Associate Professor in Image Processing at the Informatics Engineering Department of the Technological Educational Institute Of Crete and since 2010 he is the Head and Founder of the Computational Biomedicine Laboratory at FORTH-ICS and member of the Intelligent Systems & Computer Architecture Laboratory at TEI Crete (Department of Informatics Engineering). Previously he was a Principal Researcher at the Institute of Computer Science (ICS-FORTH) since 2006. During 2000-2002, he worked as a Researcher at the University of Oxford and from 2003-2006 as Associated Researcher at FORTH-ICS. He coordinated two EC projects on cancer modelling (<http://www.contracancrum.eu/> and <http://www.tumor-project.eu/>) and has actively participated in several other EC funded projects developing ICT technology focusing on medical image processing and personalized medicine. He coordinated the development of a wide range of image analysis and modelling tools designed for the clinical setting within the wider Virtual Physiological Human (VPH) EC initiative and has published more than 170 papers in international journals, books and conference proceedings focusing on medical image processing and analysis, biomedical informatics and image-based modelling for personalized medicine.

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PERSONAL DETAILS

Name	Kostas Marias
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Marital Status	Married, two children
Nationality	Greek

EDUCATION

1997 - 2001	PhD in Medical Image Analysis and Medical Physics, UCL Royal Free & University College Medical School jointly with the University of Oxford, UK. Supervisor: Professor Sir Michael Brady FRS FREng, Professor of Information Engineering, Oxford University.
1996- 1997	M.Sc in Engineering and Physical Sciences in Medicine Imperial College of Science, Technology and Medicine, Department of Bioengineering, UK
1990-1995	Diploma in Electrical & Computer Engineering (5 year program) National Technical University of Athens (NTUA) Athens, Greece.

PRINCIPAL PROFESSIONAL APPOINTMENTS

2017 -	Associate Professor in Image Processing, Technological Educational Institute Of Crete, Informatics Engineering Department, School of Technological Applications.
2010 -	Head of the Computational Biomedicine Laboratory, Institute of Computer Science (ICS), Foundation for Research and Technology – Hellas (FORTH).
2006 - 2017	Principal Researcher, Institute of Computer Science (ICS), Foundation for Research and Technology – Hellas (FORTH).
2003 - 2006	Associated Researcher, Institute of Computer Science (ICS), Foundation for Research and Technology – Hellas (FORTH).
2000 -2002	Postdoctoral Fellow, Oxford University, Information Engineering Department, Wolfson Medical Vision Laboratory, Oxford UK.
2015 -	Visiting Professor, Technological Institute of Crete.
2003 - 2010	Visiting Professor, University of Crete.

2005 -	Faculty member of the "Brain and Mind" interdisciplinary graduate program of the University of Crete.
2000 – 2002	Senior Consulting Scientist, Mirada Solutions Ltd. (UK), a spin-off from the University of Oxford for commercializing key intellectual property.
1997 - 1998	Medical Image Processing Engineer, Imperial College of Science Technology and Medicine, Bagrit Center, London, UK.

ADMINISTRATIVE APPOINTMENTS

2017-	Member of Committee for postgraduate studies, MSc in Informatics and Multimedia, Dpt. Of Informatics Engineering TEI of Crete.
2017 -	Secretary of the IEEE Engineering in Medicine and Biology Society (EMBS) Greece.
2010 - 2017	Member of the Scientific Council of the Institute of Computer Science (ICS), Foundation for Research and Technology – Hellas (FORTH) since 2010.
2015 – 2017	Member of the Interdepartmental Committee of the "Brain and Mind" interdisciplinary graduate program (University of Crete, FORTH, University Hospital of Heraklion).
2014 -	Member of the Ethics Committee of the Foundation for Research and Technology.
2015 - 2017	Appointed member of the Medical Tourism Committee at the Region of Crete.

SERVICE

Represents FORTH in the Virtual Physiological Human Institute for Integrative Biomedical Research (VPH Institute) <http://www.vph-institute.org/>

Coordinated the EC Project *Clinically Oriented Translational Cancer Multilevel Modelling* (2008-2011 Contra Cancrum FP7 223979)

Coordinated the EC Project Transatlantic Tumour Model Repositories (2010-2013 TUMOR FP7 247754)

Served as a delegate for the European Commission (DG INFSO) at the EC- US Workshop on Virtual Tissues (22-24 April 2009), held at the EPA North Carolina (US: EPA, DoE, NSF, NIH EC: DG Research Dir. F, DG INFSO)

Participated in a number of FP7 EC consultation meetings after invitation from the sector ICT for Health.

Serves regularly as a reviewer in Journals including: Medical Image Analysis, IEEE Transactions on Medical Imaging, Cancer Informatics, IEEE Transactions on Image Processing, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Information Technology in Biomedicine, Journal of Computer-Assisted Radiology and Surgery.

Has served in the Organizing Committee of the International Advanced Research Workshop on In Silico Oncology conference and in Special Sessions at IEEE EMBC, IEEE BIBE and MobiHealth conferences.

Has served in session chair/program committees in conferences such as IEEE ISBI, IEEE EMBC, BIBE, and ISBMDA. Recently has served as General Co-Chair and workshops chair at EAI International Conference on Personal, Pervasive and mobile Health, June 14-15, 2016 Budapest, Hungary (ppmhealth.org), and local organizing committee member for IST 2016 (2016 IEEE International Conference on Imaging Systems and Techniques <http://ist2016.ieee-ims.org>), Chania Crete, eHealth Forum 2015-2018.

Organizer of the first summer school on computation oncology and co-organizer of the second (<http://www.computationaloncology.org>)

PHD AND POST-DOC GRANTS AWARDED

1997-2001	UCL Fellow at Oxford (PhD grant, full scholarship jointly from Oxford University and UCL, London)
2001-2004	Cancer Research UK Postdoc Grant, CRC-SP2580/0101, total funds awarded £139,091.00, titled: "A quantitative assessment of dense breast tissue changes"

AFFILIATIONS

2003 -	IEEE Member, Engineering in Medicine and Biology (IEEE) – USA
2005 - 2010	Academy of Molecular Imaging – USA (Sponsored by UCLA)

SELECTED INVITED TALKS/KEYNOTES

1. Model-Based, Quantitative MRI Image Analysis and Machine Learning in Rectal Cancer, Invited talk, 8th Colorectal Games Symposium, Heraklion, 2018.
2. Predicting Effective Adaptation to Breast Cancer to Help Women to Bounce Back, Invited talk eHealth Forum 2017 (<https://www.dhealth.gr/>) Digital Health Conference, 19-22 October | Athens, https://www.youtube.com/watch?v=m_DCeAU6eDM
3. The iManageCancer personal health record. Invited talk at eHealth Forum, Promoting digital Health Integration for Equal Access and Sustainable Future, 2016. <http://www.ehealthforum.org/el/ehealth-forum-2016/>
4. Novel personal health systems for patient empowerment. Invited talk at eHealth Forum 2015, <http://www.2015.ehealthforum.org/>
5. Personal Health Systems for Patient Self-management and Empowerment technologies. Invited talk in the 10th National Conference for Health Management and Policy, Athens 18-20 December, 2014
6. Computational Models and medical image analysis tools for optimizing personalized predictions of therapy outcome in cancer patients. Keynote invited talk in the 19th Hellenic Conference of Clinical Oncology, April 27 2013.
7. Multi-level clinically oriented modelling in cancer research. Invited talk in the US Environmental Protection Agency, Computational Toxicology Research Program, April 21, 2009.

RESEARCH INTERESTS**MEDICAL IMAGE
PROCESSING AND
ANALYSIS**

Image Registration and Fusion
Quantitative Image Analysis
Image Classification and Segmentation
Image Retrieval
Image Reconstruction
Image Visualisation and Analysis
Image-based Biomarkers
Microarray image processing
Image Shape Analysis

**COMPUTATIONAL
MEDICINE**

Image-Based Macroscopic Cancer Modelling
Computational Model Interoperability
Microscopic Cancer Modelling
In Silico Clinical Trials

**PERSONAL
HEALTH SYSTEMS
INFORMATICS**

Personal Health Record Systems
Patient Empowerment Services
Diabetes Self-Management and Risk Assessment
Stress Recognition Personal Systems
Heart-Rate monitoring
Telemedicine and smart networking systems

RESEARCH PROJECTS 2006-2017

The following table lists all the projects Kostas Marias participated for the period 2010-2013 (as head of the Computational Medicine Lab) for which he was the Project Coordinator of the Consortium (PC), Technical Coordinator of the Project (TC), the Principal Investigator for FORTH (PI), or the CO-PI (active participation next to the PI).

Project Name	Acronym	Start	End	Funded budget	Role
Advancing Clinico-Genomic Clinical Trials on Cancer: Open Grid Services for Improving Medical Knowledge Discovery http://eu-acgt.org/	ACGT	01/02/2006	31/01/2010	1.276.200 €	CO-PI
Clinically Oriented Translational Cancer Multilevel Modelling http://www.contracancrum.eu/	Contra Cancrum	1/08/2008	31/07/2011	651.920 €	Project Coordinator
Transatlantic TUMour MOdel Repositories	TUMOUR	1/4/2010	31/3/2013	396.220 €	Project Coordinator
Driving Excellence in Integrative Cancer Research through Innovative Biomedical Infrastructures	INTEGRATE	1/2/2011	31/1/2014	818.300 €	CO-PI
Development of a research infrastructure for computational oncology	ΥΠΕΡΘΕΝ ¹	24/6/2011	23/6/2013	359.725 €	CO-PI
From data sharing and integration via VPH models to personalized medicine	p-Medicine	1/2/2011	31/1/2015	1.242.435 €	CO-PI
Enabling information re-Use by linking clinical REsearch and	EURECA	1/1/2012	31/12/2014	865.536 €	CO-PI

¹ Ανάπτυξη ερευνητικής υποδομής κλινικών υπολογιστικών εργαλείων και υπηρεσιών για την καλύτερη διάγνωση και εκτίμηση της βέλτιστης εξατομικευμένης θεραπείας ογκολογικών παθήσεων

CAre					
A Demonstration of 4D Digital Avatar Infrastructure for Access of Complete Patient Information	MyHealth Avatar	1/3/2013	29/2/2016	361.400 €	PI
Computational Horizons in Cancer: Developing Meta- and Hyper-Multiscale Models and Repositories for In Silico Oncology	CHIC	1/4/2013	31/3/2017	888.106 €	PI
Development of Interdisciplinary Research Activities for Systems Biology	ΚΡΗΠΙΣ-ΒΙΟΣΥΣ ²	1/7/2013	30/7/2015	70.000 €	PI
Regional Anaesthesia Simulator and Assistant	RASimAS	1/11/2013	31/10/2016	227.757 €	PI
Multi-channel biometrics combining acoustic and machine vision analysis of speech, lip movement and face	SpeechXRays	1/05/2015	30/4/2018	303.750 €	CO-PI
iManageCancer - Empowering patients and strengthening self-management in cancer diseases	iManage Cancer (HORIZON2020)	1/2/2015	1/7/2018	747.500	PI,TC
Predicting Effective Adaptation to Breast Cancer to Help Women to BOUNCE Back	BOUNCE (HORIZON2020)	1/11/2017	31/10/2021	726.875	CO-PI
An intelligent, deep learning enhanced multimedia stock for multimodal automated indexing, storage, searching and retrieval	IDELEMUS	2018	2021	349.500	CO-PI

² Ανάπτυξη Διεπιστημονικών Ερευνητικών Δραστηριοτήτων στην Κατεύθυνση της Βιολογίας Συστημάτων

HARMONization and integrative analysis of regional, national and international Cohorts on primary Sjögren's Syndrome (pSS) towards improved stratification, treatment and health policy making	HarmonicSS (HORIZON2020) TEI CRETE	2018	2021	215.000	CO-PI
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SHORT OVERVIEW OF RESEARCH ACTIVITIES

Medical Image Processing: Kostas Marias' research on medical image analysis focuses on developing software solutions for Clinical Decision Support providing robust software tools for extracting imaging biomarkers mainly from MRI data as well as visualization and quantification tools for guiding therapy plans. His work includes Dynamic Contrast-Enhanced Perfusion MR Imaging measurements of permeability-related pharmacokinetic parameters (Ktrans, Kep, Ve) for monitoring the effectiveness of neoadjuvant treatments as well as tumor characterization techniques based on diffusion-weighted MRI and ADC-mapping reflecting tumor cellularity. This activity has recently led to two patent applications on advanced MRI diffusion and perfusion analysis techniques for which there is an interest for commercialization.

Computational Medicine: During the last decade Kostas Marias was heavily involved in developing patient-specific multiscale computer based (in silico) models aiming towards a better understanding of the physiology and the pathology of human organs, with a special focus on cancer. One of the major concerns in clinical practice and treatment of life threatening diseases, e.g. Cancer, is the fastest possible transform of scientific discoveries arising from diverse scientific fields such as laboratory, clinical or population studies and in silico predictive models of various disease staging, into clinical applications in order to reduce their incidence, morbidity and mortality. The computational modeling approaches in his research mainly focus on developing sophisticated multiscale mathematical models of cancer for testing different therapeutic schemes, in search of the best possible treatment for each specific patient.

Biomedical informatics: Through his involvement on numerous EC projects, Kostas Marias has focused is on developing personalized ICT services for clinical data management and decision support as well as for translating novel technologies to the clinical setting. Recently he is also actively working on several e-health and m-health related projects and focuses on Personal Health Record research in the context of projects dealing with chronic disease management such as diabetes and cancer.

PUBLICATIONS

SCIENTIFIC JOURNALS

1. Behrenbruch, C.P., **Marias, K.**, Armitage, P.A., Yam, M., Moore, N.R., English, R.E., Clarke, J., & Brady, M.J. (2003). *Fusion of contrast-enhanced breast MR and mammographic imaging data*. **Medical image analysis**. 7(3), (311-340), England (1361-8415; 1361-8415). **IF 4.087**
2. Behrenbruch, C.P., **Marias, K.**, Armitage, P.A., Yam, M., Moore, N.R., English, R.E., Clarke, P.J., Leong, F.J., & Brady, M.J. (2004). *Fusion of contrast-enhanced breast MR and mammographic imaging data*. **The British journal of radiology**. 77 Spec No 2, (S201-8), England (0007-1285; 0007-1285). **IF 1.217**
3. **Marias, K.**, Behrenbruch, C.P., Highnam, R., Parbhoo, S., Seifalian, A., & Brady, M.J. (2004). *A mammographic image analysis method to detect and measure changes in breast density*. **Eur.J.Radiol.**. 52(3), (276-282), (0720048X). **IF 2.645**

4. **Marias, K.**, Ripoll, J., Meyer, H., Ntziachristos, V., & Orphanoudakis, S.C. (2005). *Image analysis for assessing molecular activity changes in time-dependent geometries*. **IEEE Trans.Med.Imaging**. 24(7), (894-900), (02780062). **IF 4.027**
5. **Marias, K.**, Behrenbruch, C.P., Parbhoo, S., Seifalian, A., & Brady, M.J. (2005). *A registration framework for the comparison of mammogram sequences*. **IEEE Trans.Med.Imaging**. 24(6), (782-790), (02780062). **IF 4.027**
6. Linguraru, M.G., **Marias, K.**, English, R.E., & Brady, M.J. (2006). *A biologically inspired algorithm for microcalcification cluster detection*. **Med.Image Anal.** 10(6), (850-862), (13618415). **IF 4.087**
7. Dimitriadis, S., **Marias, K.**, & Orphanoudakis, S.C. (2007). *A multi-agent platform for content-based image retrieval*. **Multimedia Tools Appl.** 33(1), (57-72), Hingham, MA, USA: Kluwer Academic Publishers (1380-7501). **IF 1.346**
8. Darrell, A., Meyer, H., **Marias, K.**, Brady, M.J., & Ripoll, J. (2008). *Weighted filtered backprojection for quantitative fluorescence optical projection tomography*. **Phys.Med.Biol.** 53(14), (3863-3881), (00319155). **IF 2.781 - highest for any journal focused on medical physics.**
9. Farmaki, C., **Marias, K.**, Sakkalis, V., & Graf, N. (2010). *Spatially adaptive active contours: A semi-automatic tumor segmentation technique*. **International journal of computer assisted radiology and surgery** . 5(4), (369-84). **IF 1.364**
10. Skounakis, E., Farmaki, C., Sakkalis, V., Roniotis, A., Banitsas, K., Graf, N., & **Marias, K.** (2010). *DoctorEye: A clinically driven multifunctional platform, for accurate processing of tumors in medical images*. Special Issue: *Intelligent signal and image processing in eHealth*. **The Open Medical Informatics Journal**. 4, (105-115).
11. Roniotis, A., **Marias, K.**, Sakkalis, V., & Zervakis, M.E. (2010). *Diffusive Modelling of Glioma Evolution: A review*. **Journal of Biomedical Science and Engineering, Scientific Research**. 3(5), (501-508).
12. Roniotis, A., Manikis, G., Sakkalis, V., Zervakis, M.E., Karatzanis, I., & **Marias, K.** (2011). *High grade glioma diffusive modeling using statistical tissue information and diffusion tensors extracted from atlases*. **IEEE Transactions on Information Technology in Biomedicine**. 16(2), (255-263). **IF 2.072**
13. **Marias, K.**, Dionysiou, D.D., Sakkalis, V., Graf, N., Bohle, R., Coveney, P.V., Wan, S., Folarin, A., Büchler, P., Reyes, M., Clapworthy, G., Liu, E., Sabczynski, J., Bily, T., Roniotis, A., & Tsiknakis, M.N. (2011). *Clinically-Driven Design of Multiscale Cancer Models: the Contra Cancrum Project Paradigm*. **J. R. Soc Interface Focus**. 1, (450-461). **IF 3.856**
14. Alexandros Roniotis, **Kostas Marias**, Vangelis Sakkalis, Georgios C. Manikis, and Michalis Zervakis, "Simulating Radiotherapy Effect in High-Grade Glioma by Using Diffusive Modeling and Brain Atlases," *Journal of Biomedicine and Biotechnology*, vol. 2012, Article ID 715812, 9 pages, 2012. doi:10.1155/2012/715812. **IF 2.706**
15. Roniotis, A., Sakkalis, V., Karatzanis, I., Zervakis, M.E., & **Marias, K.** (2012). *In-depth analysis and evaluation of diffusive glioma models*. **IEEE Transactions on Information Technology in Biomedicine**. 2012. 16(3), (299-307). **IF 2.072**
16. Georgios Stamatakis, Dimitra Dionysiou, Aran Lunzer, Robert Belleman, Eleni Kolokotroni, Eleni Georgiadi, Marius Erdt, Juliusz Pukacki, Stefan Rueping, Stavroula Giatili, Alberto d'Onofrio, Stelios

- Sfakianakis, **Kostas Marias**, Christine Desmedt, Manolis Tsiknakis, Norbert Graf. (2013). *The Technologically Integrated Oncosimulator: Combining Multiscale Cancer Modeling with Information Technology in the In Silico Oncology Context*. **IEEE journal of biomedical and health informatics**. 18(3):840-84. DOI:10.1109/JBHI.2013.2284276. **IF 2.706**
17. David Johnson, Steve McKeever, Georgios Stamatakis, Dimitra Dionysiou, Norbert Graf, Vangelis Sakkalis, **Konstantinos Marias**, Zhihui Wang, Thomas S Deisboec. (2013). *Dealing with Diversity in Computational Cancer Modeling*. **Cancer informatics** 05/2013; 12:115-124. **IF 1.64**
18. Irini Genitsaridi, Haridimos Kondylakis, Lefteris Koumakis, **Kostas Marias**, Manolis Tsiknakis. (2013). *Evaluation of personal health record systems through the lenses of EC research projects*. **Computers in biology and medicine**. 59:175-85. **IF 1.98**
19. Irini Genitsaridi, Haridimos Kondylakis, Lefteris Koumakis, **Kostas Marias**, Manolis Tsiknakis. (2013). *Towards Intelligent Personal Health Record Systems: Review, Criteria and Extensions*, **Procedia Computer Science**, 21: 327 – 334
20. Haridimos Kondylakis, Eleni Kazantzaki, Lefteris Koumakis, Irini Genitsaridi, **Kostas Marias**, Alessandra Gorini, Ketti Mazzocco, Gabriella Pravettoni, Danny Burke, Gordon McVie and Manolis Tsiknakis. (2014). *Development of Interactive Empowerment services in support of personalized medicine*. **eCancer Medical Science Journal**. 8:400 DOI: 10.3332/ecancer.2014.400
21. Sakkalis, V., Sfakianakis, S., Tzamali, E., **Marias, K.**, Stamatakis, G., Misichroni, F., Ouzounoglou, E., Kolokotroni, E., Dionysiou, D., Johnson, D., McKeever, S., Graf, N. (2014). *Web-based Workflow Planning Platform Supporting the Design and Execution of Complex Multiscale Cancer Models*. **IEEE Journal of Biomedical and Health Informatics**. 2014/3/1, DOI 10.1109/JBHI.2013.2297167 **IF 2.706**
22. EG Spanakis, V Sakkalis, **K Marias**, A Traganitis (2014). *Cross Layer Interference Management in Wireless Biomedical Networks*. **Entropy** 16 (4), 2085-2104 **IF 1.57**
23. Tzamali E, Grekas G, **Marias K**, Sakkalis V. (2014). *Exploring the Competition between Proliferative and Invasive Cancer Phenotypes in a Continuous Spatial Model*. **PLoS ONE**. 9(8): e103191. doi:10.1371/journal.pone.0103191 **IF 3.54**
24. M Spanakis, **K Marias**. (2014). *In silico evaluation of gadofosveset pharmacokinetics in different population groups using the Simcyp® simulator platform*, **In Silico Pharmacology** 2:2, 2014
25. D. Chourmouzi, E. Papadopoulou, **K. Marias**, A. Drevelegas. (2014). *Imaging of Brain Tumors*. **Surgical Oncology Clinics of North America**. 23:629–684, doi:10.1016/j.soc.2014.07.004. **IF 1.674**
26. Doenja M.J. Lambregts, Milou H. Martens, Raymond C.W. Quah, Katerina Nikiforaki, Luc A. Heijnen, Cornelis H.C. Dejong, Geerard L. Beets, **Kostas Marias**, Nickolas Papanikolaou and Regina G.H. Beets-Tan. (2015). *Whole-liver diffusion-weighted MRI histogram analysis: effect of the presence of colorectal hepatic metastases on the remaining liver parenchyma*. **European Journal of Gastroenterology & Hepatology**. 27:399–404. **IF 2.2**
27. Lagani, V., Chiarugi, F., Manousos, D., Verma, V., Fursse, J., **Marias, K.** & Tsamardinos, I. (2015). *Realization of a service for the long-term risk assessment of diabetes-related complications*. **Journal of Diabetes and Its Complications**. 29:691–698. **IF 2.684**

28. Sabine Müller, Ruslan David, **Kostas Marias** and Norbert Graf (2015). *The Standardized Histogram Shift of T2 Magnetic Resonance Image (MRI) Signal Intensities of Nephroblastoma Does Not Predict Histopathological Diagnostic Information*. **Cancer Informatics: Computer Simulation, Visualization, and Image Processing of Cancer Data and Processes**. 2015:14(S1) 1–5 **IF 1.674**
29. Alexandros Roniotis, Mariam-Eleni Oraiopoulou, Eleftheria Tzamali, Eleftherios Kontopodis, Sofie Van Cauter, Vangelis Sakkalis, **Kostas Marias**. (2015). *A proposed paradigm shift in initializing cancer predictive models with DCE-MRI based PK parameters: A feasibility study*, **Cancer Informatics: Computer Simulation, Visualization, and Image Processing of Cancer Data and Processes**, 2015:14(S4) 7–18 doi: 10.4137/CIN.S19339. **IF 1.674**
30. Milou H Martens, Doenja M. J. Lambregts, Nickolas Papanikolaou, Styliani Alefantinou, Monique Maas, Georgios C. Manikis, **Kostantinos Marias**, Robert G. Riedl, Geerard L. Beets, Regina G. H. Beets-Tan. (2015). *Magnetization transfer imaging to assess tumour response after chemoradiotherapy in rectal cancer*. **European Radiology**, DOI 10.1007/s00330-015-3856-3. **IF 4.338**
31. Eleftherios Kontopodis, Georgia Kanli, Georgios C. Manikis, Sofie Van Cauter, **Kostas Marias**. (2015). *Assessing treatment response through generalized pharmacokinetic modeling of DCE-MRI data*, **Cancer Informatics: Computer Simulation, Visualization, and Image Processing of Cancer Data and Processes**, 2015:14(S4).
32. David Johnson, James Osborne, Zhihui Wang, **Kostas Marias**. (2015). *Computer Simulation, Visualization, and Image Processing of Cancer Data and Processes (Editorial)*, **Cancer Informatics: Computer Simulation, Visualization, and Image Processing of Cancer Data and Processes**, 14(Suppl 4): 105–108.
33. Koumakis, L., K. Sigdel, Potamias, G.A., Sfakianakis, S.G., van Leeuwen, J, Zacharioudakis, G., Moustakis, V.A., Zervakis, M.E., Bucur, A., Marias, K., Graf, N., & Tsiknakis, M.N. (2015). *Bridging miRNAs and pathway analysis in clinical decision support; a case study in nephroblastoma*. *Network Modeling Analysis in Health Informatics and Bioinformatics*, 4(1):30.
34. Sfakianaki, P., Koumakis, L., Sfakianakis, S.G., Iatraki, G., Zacharioudakis, G., Graf, N., **Marias, K.**, & Tsiknakis, M.N. (2015). *Semantic biomedical resource discovery: a Natural Language Processing framework*, **BMC Medical Informatics and Decision Making**, 15(77).
35. Georgios Tzedakis, Eleftheria Tzamali, **Kostas Marias**, and Vangelis Sakkalis (2015). *The Importance of Neighborhood Scheme Selection in Agent-based Tumor Growth Modeling*, **Cancer Informatics: Computer Simulation, Visualization, and Image Processing of Cancer Data and Processes**, 14(Suppl 4): 67–81.
36. Haridimos Kondylakis, Brecht Claerhout, Mehta Keyur, Lefteris Koumakis, Jasper van Leeuwen, **Kostas Marias**, David Perez-Rey, Kristof De Schepper, Manolis Tsiknakis, Anca Bucur (2016). *The INTEGRATE Project: Delivering solutions for efficient multi-centric clinical research and trials*, **Journal of Biomedical Informatics**, Volume 62, pp. 32–47.
37. Y. Andreu, F. Chiarugi, S. Colantonio, G. Giannakakis, G. Giorgi, P. Henriquez, E. Kazantzaki, D. Manousos, **K. Marias**, MA. Matuszewski, BJ. Pascali, M. Padiaditis, G. Raccichini, and M. Tsiknakis (2016). *Wize mirror - a smart, multisensory cardio-metabolic risk monitoring system*, Elsevier, **Computer Vision and Image Understanding**, Volume 148, pp. 3–22.

38. Nikolaos Kartalis, Georgios C Manikis, Louiza Loizou, Nils Albiin, Frank G Zöllner, Marco Del Chiaro, **Kostas Marias**, Nikolaos Papanikolaou (2016). *Diffusion-weighted MR imaging of pancreatic cancer: A comparison of mono-exponential, bi-exponential and non-Gaussian kurtosis models*, Elsevier, **European Journal of Radiology Open**, Volume 3, pp. 79-85.
39. Emmanouil G Spanakis, Silvina Santana, Manolis Tsiknakis, **Kostas Marias**, Vangelis Sakkalis, António Teixeira, Joris H Janssen, Henri de Jong and Chariklia Tziraki (2016). *Technology-Based Innovations to Foster Personalized Healthy Lifestyles and Well-Being: A Targeted Review*, JMIR Publications, **Journal of Medical Internet Research**, 18 (6).
40. Lefteris Koumakis, Alexandros Kanterakis, Evgenia Kartsaki, Maria Chatzimina, Michalis Zervakis, Manolis Tsiknakis, Despoina Vassou, Dimitris Kafetzopoulos, **Kostas Marias**, Vassilis Moustakis, George Potamias (2016). *MinePath: Mining for Phenotype Differential Sub-paths in Molecular Pathways*, **PLoS Comput Biol**, Volume 12, Issue 11.
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GRADUATE AND POSTGRADUATE SUPERVISION

PhD Advisory Committee (member of PhD tribunal)

- 2016-** *Anastasia Pentari*, PhD Title: “optimal reconstruction of Diffusion-Weighted MRI signal and Dynamic Contrast-Enhanced MRI study with Compressed Sensing Techniques”, joint supervision with Prof. P. Tsakalides, Computer Science Department, University of Crete.
- 2015-** *Georgios Ioannidis*, PhD Title: “Qualitative evaluation of perfusion studies with non-ionizing (MRI) and low dose radiation (CT) protocols”, joint supervision with Prof. Perisinakis Kostas, Faculty of Medicine, University of Crete.
- 2015-** *Constantinos Spanakis*, PhD Title: “Information theory and its application to image alignment”, Science Department, jointly with Ass. Prof. E. Mathioudakis, Technical University of Crete.
- 2016-** *Katerina Kiniforaki*, PhD Title: “Multi Parametric MR Imaging of Soft Tissue Sarcomas”, joint supervision with Prof. Apostolos Karantanias, Chairman of Medical Imaging, University of Crete Medical School.
- 2015 -** *Irini Genitsaridi*, PhD Title: “Temporal Probabilistic Reasoning on Longitudinal Patient Trajectories to enhance Outcome Prediction and Decision Making: A Recommendation System applied in Rheumatoid Arthritis Treatment.”, with Prof. P. Sidiropoulos (University of Crete Medical School) and Prof. D. Plexousakis, Computer Science Department, University of Crete.
- 2014 -** *Mari Venianaki*, PhD title: “Cancer tissue classification from DCE-MRI data using pattern recognition techniques”, IMT School for advance studies, Lucca, Italy (joint supervision with Prof. Ovidio Salvetti).
- 2014-** *Georgios Kalaitzakis*, PhD Title: “Quantitative T2* MRI image analysis algorithms”, University of Crete Medical School.
- 2014 -** *George Manikis*, PhD Title: “Novel MRI imaging techniques and analysis of articular cartilage and bone marrow oedema in the knee joint and MRI markers-based modelling”, joint supervision with Prof. Apostolos Karantanias, Chairman of Medical Imaging, University of Crete Medical School.
- 2014 -** *Anastasia Pampouchidou*, Title: Clinically-driven Facial Image Analysis for Emotion Recognition, co- supervision with Prof. Mériaudeau Fabrice Université de Bourgogne
- 2009 -2013** *Alexandros E. Roniotis*, Thesis title: Glioma growth Modelling, Technical University of Crete, Electronic and Computer Engineer Department (member of PhD tribunal with Prof. M. Zervakis)
- 2005 -2009** *Alex Darrell*, PhD in Molecular Image Analysis (joint supervision with Mike Brady University of Oxford)

MSc Students Supervisor

- 2017 -** Konstantinos Tsagkarakis, Department Of Informatics Engineering, Technological Educational Institute of Crete, MSC IN INFORMATICS & MULTIMEDIA.
- 2017 -** Eleftherios Trivizakis, Department Of Informatics Engineering, Technological Educational Institute of Crete, MSC IN INFORMATICS & MULTIMEDIA.
- 2015 – 2016** Iosif Serafeimidis, “Texture Analysis on DCE-MR and DW-MR Images”, Department Of Informatics Engineering, Technological Educational Institute of Crete, MSC IN INFORMATICS & MULTIMEDIA.
- 2013-2015** Georgios Ioannidis, “Diffusion Magnetic Resonance Imaging Techniques: Applications in Brain and Human Body” MSc in Applied Mathematics, University of Crete
- 2013 – 2015** Kanli Georgia, MSc in Computational Physics at SU & KTH, Sweden (working for her thesis full time at the CML Lab FORTH)
- 2013- 2015** Marilena Oraiopoulou, Brain and Mind MSc Program, University of Crete Thesis title “Magnetic Resonance Imaging in Human Brain Cancers”
- 2011-2013** Constantinos Spanakis, MSc Technical University of Crete. Thesis title “Numerical modeling of tumor growth using level set method”
- 2005 - 2007** Hara Stefanou, MSc in CSD, University of Crete jointly with Prof. P. Tsakalides
- 2004 - 2005** Eleftherios Garyfalidis, Brain and Mind MSc Program, University of Crete
- 2003 - 2005** Socrates Dimitriadis, MSc in CSD, University of Crete with Prof. S. C. Orphanoudakis
- 2003 - 2004** John Moustakas, MSc in CSD, University of Crete with Prof. S. C. Orphanoudakis

Undergraduate Supervision

- 2018 -** Stefanos Gkikas, “**Identity verification by combining video, image and sound**”, Department Of Informatics Engineering, Technological Educational Institute of Crete.
- 2018 -** Avtadil Dimitriadis, “**Identity verification by combining video, image and sound**”, Department Of Informatics Engineering, Technological Educational Institute of Crete.
- 2018 -** Vasilios Melisianos, “**Bag of words techniques for differentiating tissue classes in medical images**”, Department Of Informatics Engineering, Technological Educational Institute of Crete.
- 2017 -** Iraklis Skepasianos, “**Gabor Filters and texture analysis for DCE-MRI data**”, Department Of Informatics Engineering, Technological Educational Institute of Crete,

COURSES TAUGHT

2004-2008: University of Crete (HY-571)

2005-present: Brain and Mind (Interdisciplinary MSc course)

Course: Medical Image Analysis and Processing (Instructor)

<http://www.csd.uoc.gr/~hy571/>

Description: Medical imaging systems and physical principles of medical imaging modalities from the cellular to the tissue level. Medical image reconstruction methods, as well as 2D and 3D medical image processing. Image processing techniques: Registration, Data-Fusion,

Segmentation and Normalization. Algorithms for the description and retrieval of medical images by content. Picture archiving and communication systems (PACS). Introduction to the analysis of gene-expression data.

2004-2008: University of Crete CSD (HY-528)

2005-present: Brain and Mind (Interdisciplinary MSc course)

Course: Biomedical Engineering and Signal Analysis (Instructor)

<http://www.csd.uoc.gr/~hy528/>

Description: Basic introduction to physiology for engineers and computer scientists. Introduction to cellular dynamics and resting potential. Description of action potentials. Basic principles of the cardiovascular system: blood pressure, measurement of blood flow

and volume. Digital signal processing and algorithms for biomedical signal analysis. Computer analysis for ECG and EEG: algorithms and software development for diagnosis and research.

2015-2017: Technological Institute of Crete (TPI60A4)

Course: Bioinformatics and Physiological Systems Modelling

Description: Analysis of microarray images with image processing and statistical analysis tools. Introduction to Bioinformatics: databases, tools and open source software. Bioinformatics

applications in systems biology, pharmacogenomics and personalized medicine. Basic principles of modelling and methods for modelling physiological systems (PS). Use of Simulink for analysis and simulation of PS. Principles of cardiovascular system and modelling examples with Simulink. Principles of nervous system and modelling examples of neural function with electrical circuits. Introduction to Pharmacokinetics and Pharmacogenomics with application in image analysis of MRI data.

2016-: Technological Institute of Crete (TP320)**Course: Digital Image Processing**

Description: Introduction to Digital Image Processing. Spatial Filtering and Neighboring operators. Image enhancement with point processing operations, brightness transformations and histogram equalization. Fourier analysis, Discrete Fourier

Transform and Image enhancement in the frequency domain. Image enhancement and periodic noise removal in the frequency domain with the use of filters. Image restoration and Image sharpening in the spatial and frequency domain. Morphological Image Processing.

2016-: Technological Institute of Crete (TP60Λ4)**Course: Advances in Digital Imaging and Computer Vision**

Description: Imaging and computer vision are two neighboring research areas gaining great attention from the research community during the last years. This course focuses on the analysis of the

patterns in visual images with the view to understanding the objects and processes in the world that generate them. This subject is cross-disciplinary, drawing on mathematics and statistics, physics, optics, physiology, and information theory, as well as computer science, and has many applications including remote sensing, multimedia, surveillance, manufacturing, robotics, medical imaging, human computer interaction. Major topics include optics, image representation, feature extraction, image processing and analysis, object recognition, motion estimation, 3D and multi-view imaging. The emphasis is both on learning mathematical concepts and techniques and on their implementation (Matlab) to solve real vision and imaging problems.

2016-: Technological Institute of Crete (TP282)**Course: Computer Vision**

Description: The course aims to provide students with theoretical and practical knowledge of basic machine vision concepts for computing connected components, for shape analysis, image topology and morphology, edge detection and detection of points of

interest (Harris method, Hough transform), for aligning images (image registration), for image segmentation and object recognition.

PATENTS

Georgios Manikis, Eleftherios Kontopodis, Konstantinos Marias: Apparatuses, methods and systems for estimating water diffusivity and microcirculation of blood using dw-mri data.

US 20160139226 A1

<https://www.google.com/patents/US20160139226>

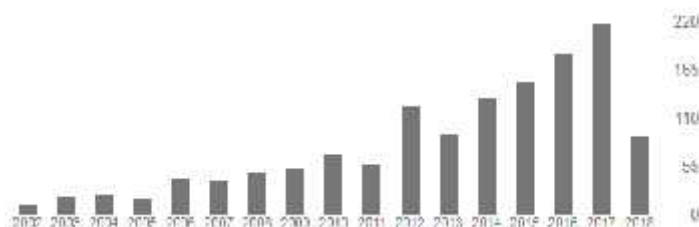
BIBLIOMETRIC DATA

GOOGLE SCHOLAR DATA FOR KOSTAS MARIAS

Webpage: https://scholar.google.gr/citations?hl=en&user=2Lx7a7QAAAAJ&view_op=list_works&sortby=pubdate

<i>Citation indices</i>	<i>All</i>	<i>Since 2013</i>
Citations	1403	867
h-index	19	15
i10-index	48	26

Citations per year



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RG Score: 33.13

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