

Curriculum Vitae

Giorgos Giannakakis

Personal Information

Name Giorgos Giannakakis
Date of Birth 15/12/1979 (Athens, Greece)
Address N. Plastira 100, Vassilika Vouton
700 13 Heraklion, Crete, Greece
Phone ☎ (+30) 2810 391310, ☎ (+30) 697 6928693
email ggian@ics.forth.gr
website <http://users.ics.forth.gr/~ggian>

Education

- 2005-2009 **Ph.D in Biomedical Engineering (Biomedical Electronics and Informatics)**
School of Medicine, University of Patras - School of Electrical and Computer Engineering,
National Technical University of Athens
Degree: Excellent
- 2003-2005 **M.Sc in Biomedical Engineering**
School of Medicine, University of Patras - School of Electrical and Computer Engineering,
National Technical University of Athens
Degree: 8.06/10
- 1998-2003 **Dipl.-Ing. in Electrical and Computer Engineering**
School of Electrical and Computer Engineering, National Technical University of Athens
Degree: 8.12/10

Research experience

- 11/2012-today **Postdoctoral Research Associate**, Foundation for Research and Technology Hellas (FORTH),
Institute of Computer Science.
SeeFar: Smart glasses for multifaceted visual loss mitigation and chronic disease prevention indicator
for healthier, safer, and more productive workplace for ageing population. (H2020-SC1-DTH-2018-1,
GA No 826429)
UNICORN: A framework for multi-cloud software fostering cloud technologies uptake from digital
SMEs and startups. (H2020-ICT-2016, GA No 731846)
SEMEOTICONS: SEMEiotic Oriented Technology for Individual's Cardiometabolic risk self-assessment
and Self-monitoring (FP7-ICT-2013, GA No 611516)
P-Medicine: From data sharing and integration via VPH models to personalized medicine (FP7-ICT-
2009, No 270089)
INTEGRATE: Driving Excellence in Integrative Cancer Research through Innovative Biomedical
Infrastructures (FP7-ICT-2009, No 270253)
CHIC: Computational Horizons in Cancer, Developing Meta- and Hyper-Multiscale Models and
Repositories for In Silico Oncology (FP7-ICT-2011, No 600841)
predictES: An Integrated wearable platform predicting Epileptic Seizures and novel neurofeedback
approaches in support of personalized patient management
- 04/2017-04/2019 **Scientific Advisor/Principal investigator**, Foundation for Research and Technology Hellas
(FORTH), Institute of Computer Science.
Postdoctoral scholarship (Greek State Scholarships Foundation): Investigation of stress and psychological
trauma through facial videos and biosignals.
- 07/2014-12/2014 **Postdoctoral Research Associate**, Technological Educational Institute of Crete.
MyHealthAvatar: A Demonstration of 4D Digital Avatar Infrastructure for Access of Complete Patient
Information (FP7-ICT-2011, No 600929).

- 01/2006-12/2008 **Principal Investigator**, National Technical University of Athens (NTUA).
PENED 2003, Development of advanced computational algorithms and tools for the support of functional intervention in Parkinson disease and resistant epilepsy.
- 01/2005-04/2009 **Scientific Associate**, Institute of Communications and Computer Systems (ICCS).
02/2009-04/2009 Health effects of electromagnetic radiation and wireless communications.
04/2008-06/2008 INTERMED, An INTEgrated broadband telecommunication pilot teleservices-platform for improving health care provision in the Region of MEDiterranean.
04/2008-04/2008 iWebCare, Integrated Web services platform for the facilitation of fraud detection in health care e-government services.
07/2006-07/2006
01/2005-03/2005 Development of 4th generation Wireless Systems Resources' Management.
- 03/2006-06/2006 **Scientific Associate**, National Technical University of Athens (NTUA).
Provision of technical services of the work of transactions automation.

Professional experience

- 09/2004-today **Web developer**, Self employed.
Design and implementation of websites
- www.euzoea.com (technologies PHP, MySQL, Wordpress)
 - www.apokinou.gr (technologies PHP, MySQL, Joomla)
 - www.musicalinstruments.gr (technologies PHP, MySQL, Wordpress)
 - www.mesarmi.gr (technologies PHP, MySQL, Wordpress)
 - www.tangoneon.gr (technologies PHP, MySQL, Wordpress)
 - www.chaniafestival.gr (technologies PHP, MySQL, Wordpress)
 - www.hotels-kania.gr (technologies PHP, MySQL, AJAX, JQuery, Javascript, Google Maps, SEO)
 - www.bibe2008.org (technologies PHP, MySQL)
 - www.ontas.gr (technologies PHP, Google Maps)
 - www.biosim.ntua.gr/smartdiab
 - www.biosim.ntua.gr (technologies HTML/DHTML, SEO)
- 09/2010-10/2012 **Electrical Engineer**, Self employed.
Implementation of electromechanical works
- 02/2012-08/2012 Directorate of Technical Works of Chania Regional Unit.
Work: Building infrastructure improvement and EM fixtures of Kissamos Health Center
- 04/2011-04/2012 Region of Crete, Directorate of Technical Works.
Work: Addition of A' floor in childcare station of Municipality of Nea Kydonia
- 07/2009-08/2009 Engineer in place, *TYDK of Crete Region*.
Work: Lightning of Municipality Kantanou with traditional poles
- 04/2012-10/2012 **Programmer**, Medicines Du Monde (Chania Polyclinic), (voluntary work).
Design and implementation of clinic/pharmacy management web-based application (technologies php, mySQL, Ajax, JQuery)
- 08/2009-05/2010 **Soldier**, Compulsory Military Service at Hellenic Army.
- 10/2008-03/2009 **Analyst/Programmer**, University Mental Health Research Institute, (voluntary work).
Design and implementation of electroencephalographic recording system (NI Labview technology)
- 02/2007-06/2009 **Analyst/Programmer**, Hellenic Center of Neurosurgical Research.
Design, implementation and support of a web-based data management and analysis system for epileptic patients - EPILDA (JSP, JBoss 4, MS SQL Server technologies)
- 02/2004-06/2009 **Ph.D Candidate**, Laboratory Assistance at Biomedical Simulations and Imaging (BIOSIM).
- Measurements Supervisor: Measurements of electromagnetic radiation levels (RF) in regions being in the proximity of base stations of mobile communications system
 - Webmaster of the lab website (www.biosim.ntua.gr)
 - Writing and implementation of research projects
- 10/2006-12/2008 **Instructor**, "System" consultant company.
Statistics seminars
- 09/2005-02/2008 **Instructor**, "KEK Parthenon" Computer Studies.
Informatics seminars
- 07/2005-08/2005 **Instructor**, MEMO Computers.
Informatics seminars

- 03/2004-06/2004 **Instructor**, “IEK Domi” Computer Studies.
Programming Languages (Java, Javascripts, C++) seminars
- 2000-2003 Work in Technical Office during summer months.

Teaching experience

Teaching work in higher/university education

Teaching work in 4 different universities 2 postgraduate και 14 undergraduate lessons. The total non overlapping teaching experience is 6.5 years (13 semesters).

- 03/2019-today **Associate Lecturer**, Bioinformatics and Neuroinformatics, Hellenic Open University.
Recording and Processing of Neural Biosignals
- 03/2018-07/2018 **Visiting Lecturer**, Computer Science Department, University of Crete.
Pattern Recognition
- 10/2012-02/2018 **Adjunct Laboratory Collaborator/Instructor**, Department of Informatics Engineering TE, Technological Educational Institute of Crete.
Course:
Machine Vision (winter 2014, winter 2016)
Laboratories:
Machine Vision (winter 2014, winter 2017)
Telemedicine (spring 2013)
Multimedia Applications in Healthcare (winter 2013)
Digital Signal Processing (winter 2012, spring 2016)
- 10/2014-02/2015 **Adjunct Laboratory Collaborator/Instructor**, Department of Nursing, Technological Educational Institute of Crete.
Biosignals Processing
Informatics I
- 10/2012-02/2013 **Adjunct Scientific Collaborator/Instructor**, Department of Music Technology and Acoustics, Technological Educational Institute of Crete.
Course: Multimedia Applications
Laboratory: Multimedia Applications
- 03/2012-07/2012 **Adjunct Lecturer**, Department of Production Engineering and Management, Division of Management and Administration, Technical University of Crete.
Algorithms and Data Structures (Lab assignments in C)
- 10/2010-07/2012 **Adjunct Scientific Collaborator/Instructor**, Department of Electronics, Technological Educational Institute of Crete.
Course:
Digital Control Systems (spring 2012)
Laboratories:
Signals and Systems (spring 2012)
Digital Control Systems (spring 2011, spring 2012)
Digital Signal Processing (winter 2010, spring 2011)
Robotics (winter 2010)
Electrical and Electronic Measurements (winter 2010 - spring 2011)
- 03/2005-07/2005, 2006, 2007, 2008, 2009 **Teaching Assistant**, School of Electrical and Computer Engineering, NTUA.
Supervision of semester projects
Postgraduate Course in Biomedical Engineering
“Bioelectromagnetism”
- 09/2006-02/2007 **Teaching Assistant**, School of Electrical and Computer Engineering, NTUA.
09/2007-02/2008 Supervision of lab assignments during undergraduate courses
“Simulation of Physiological Systems”
“Biomedical Engineering Laboratory”

Students' Advisor

Co-advisor of total nine (9) theses: four (4) postgraduate these and five (5) undergraduate theses.

- 04/2019-02/2020 Co-Advisor of undergraduate thesis, «Compressed Sensing Methods for Analysis of Epileptic Seizures», Tsekos Nikolaos, Technical University of Crete, 2019

- 09/2015-10/2016 Co-Advisor of M.Sc. thesis, «*Exploring eye activity as an indication of emotional state*», Tzedakis Charalampos, TEI Crete, 2016
- 06/2015-03/2016 Co-Advisor of undergraduate thesis, «*Cognitive processes information extraction via EEG*» (in Greek), Grigoriadis Dimitris, TEI Crete, 2016
- 03/2014-09/2015 Co-Advisor of undergraduate thesis, «*Driver Drowsiness Detection via Eye Characteristics Extracted from Videos*» (in Greek), Asargiotakis Kostas, TEI Crete, 2015
- 04/2013-10/2013 Co-Advisor of undergraduate thesis, «*Magnetoencephalographic Analysis using Projection on Independent Components (ICA)*» (in Greek), Antonakakis Marios, TUC, 2013
- 09/2009-07/2010 Co-Advisor of M.Sc. thesis, «*Non Linear Analysis of EEG Causal Interactions*» (in Greek), Korda Alexandra, NTUA, 2010.
- 09/2008-07/2009 Co-Advisor of M.Sc. thesis, «*Extraction of Quantitative Synchronization Measures of Cerebral Activity*» (in Greek), Lekkas Alexandros, NTUA, 2009.
- 09/2008-07/2009 Co-Advisor of M.Sc. thesis, «*EEG Study Based on Information Theory measures*» (in Greek), Xenikou Monika-Filitsa, NTUA, 2009.
- 02/2006-07/2006 Co-Advisor of undergraduate thesis, «*Brain Regions Connectivity Study using computational methods and EEG data*» (in Greek), Skoularikis Grigoris, NTUA, 2006.

Language Skills

Greek	Native Speaker	Native Language
English	Fluent	Cambridge Certificate of Proficiency in English (Grade C)
German	Conversant	Zertifikat Gesamnote Gut (101.75/120)

Technical skills

Programming Languages	MATLAB, C/C++, Java Fortran, Prolog, Python	Web Development	HTML/HTML5, PHP, Javascript, JSP, AJAX, JQuery, XML, CSS/CSS3, WordPress, Google Maps API
Databases	MS SQL Server, MySQL	Statistics	SPSS
Operating Systems	Windows XP/Vista/7/8/10, Linux Ubuntu	Office automation	Microsoft Office, \LaTeX
Graphic Design	Adobe Photoshop, Premiere, Flash	Other	NI Labview

Publications

Refereed Journal publications

- [J1] G. Giannakakis, D. Grigoriadis, K. Giannakaki, O. Simantiraki, A. Roniotis, and M. Tsiknakis. Review on psychological stress detection using biosignals. *IEEE Transactions on Affective Computing*, 2019. (IF: 6.288).
- [J2] P. Henriquez, B.J. Matuszewski, Y. Andreu-Cabedo, L. Bastiani, S. Colantonio, ..., A. Bjorgan, G. Giannakakis, M. Pediaditis, F. Chiarugi, E. Christinaki, K. Marias, and M. Tsiknakis. Mirror mirror on the wall... an unobtrusive intelligent multisensory mirror for well-being status self-assessment and visualisation. *IEEE Transactions on Multimedia*, 19(7):1467-1481, July 2017. (IF: 5.452).
- [J3] G. Giannakakis, M. Pediaditis, D. Manousos, E. Kazantzaki, F. Chiarugi, P.G. Simos, K. Marias, and M. Tsiknakis. Stress and anxiety detection using facial cues from videos. *Biomedical Signal Processing and Control*, 31:89-101, 2017. (IF: 2.943) (**Top 20 most-cited articles in the BSPC journal**).
- [J4] Y. Andreu, F. Chiarugi, S. Colantonio, G. Giannakakis, G. Giorgi, P. Henriquez, E. Kazantzaki, D. Manousos, K. Marias, MA. Matuszewski, BJ. Pascali, M. Pediaditis, G. Raccichini, and M. Tsiknakis. Wize mirror - a smart, multisensory cardio-metabolic risk monitoring system. *Computer Vision and Image Understanding*, 148:3-22, 2016. (IF: 2.645).
- [J5] C. Papageorgiou, A.D. Rabavilas, X. Stachteia, G.A. Giannakakis, M. Kyprianou, G.N. Papadimitriou, and C.N. Stefanis. The interference of introversion-extraversion and

depressive symptomatology with reasoning performance: A behavioural study. *Journal of Psycholinguistic Research*, 41(2):129-139, 2012. (IF: 0.659).

Book Chapters

- [B1] G. Giannakakis, V. Sakkalis, M. Pediaditis, and M. Tsiknakis. Methods for Seizure Detection and Prediction: An Overview. *Neuromethods*, Springer New York, 91:131-157, 2015.

Conference publications

- [C1] G. Giannakakis, M.R. Koujan, M. Tsiknakis, A. Roussos, and K. Marias. Automatic stress detection evaluating models of facial action units. In *13th IEEE Conference on Automatic Face and Gesture Recognition (FG2020)*, Buenos Aires, Argentina, 18-22 May 2020.
- [C2] M.R. Koujan, L. Alharbawee, G. Giannakakis, N. Pugeault, and A. Roussos. Real-time facial expression recognition “In The Wild” by disentangling 3D expression from identity. In *13th IEEE Conference on Automatic Face and Gesture Recognition (FG2020)*, Buenos Aires, Argentina, 18-22 May 2020.
- [C3] G. Giannakakis, N. Stefanakis, A. Ilias, and P. Simos. Evaluation of social and cognitive load stress detection using speech-derived features. In *8th International Conference on Computational Bioengineering (ICCB2019)*, Belgrade, Serbia, 4-6 September 2019.
- [C4] G. Giannakakis, E. Trivizakis, M. Tsiknakis, and K. Marias. A novel multi-kernel 1d convolutional neural network for stress recognition from ECG. In *8th International Conference on Affective Computing and Intelligent Interaction (ACII 2019)*, Cambridge, UK, 3-6 September 2019. (27% acceptance rate).
- [C5] G. Giannakakis, K. Marias, and M. Tsiknakis. A stress recognition system using HRV parameters and machine learning techniques. In *8th International Conference on Affective Computing and Intelligent Interaction (ACII 2019)*, Cambridge, UK, 3-6 September 2019. (27% acceptance rate).
- [C6] D. Melhart, K. Sfikas, G. Giannakakis, G. Yannakakis, and A. Liapis. A study on affect model validity: Nominal vs ordinal labels. In *2018 IJCAI workshop on AI and Affective Computing*, Stockholm, Sweden, 16-19 July 2018.
- [C7] G. Giannakakis, D. Manousos, P. Simos, and M. Tsiknakis. Head movements in context of speech during stress induction. In *13th IEEE Conference on Automatic Face and Gesture Recognition (FG2018)*, Xi’an, China, 16-19 May 2018.
- [C8] G. Giannakakis, D. Manousos, and M. Tsiknakis. Evaluation of head pose features for stress detection and classification. In *IEEE Conference on Biomedical and Health Informatics (BHI)*, Las Vegas, USA, 4-7 March 2018.
- [C9] K. Giannakaki, G. Giannakakis, C. Farmaki, and V. Sakkalis. Emotional state recognition using advanced machine learning techniques on EEG data. In *30th IEEE International Symposium on Computer-Based Medical Systems*, Thessaloniki, 22-24 June 2017.
- [C10] O. Simantiraki, G. Giannakakis, A. Pampouchidou, and M. Tsiknakis. Stress detection from speech using spectral slope measurements. In *MINDCARE2016, 6th EAI International Symposium on Pervasive Computing Paradigms for Mental Health*, Barcelona, 28-29 November 2016.
- [C11] A. Pampouchidou, O. Simantiraki, A. Fazlollahi, M. Pediaditis, D. Manousos, A. Roniotis, G. Giannakakis, F. Meriaudeau, P. Simos, K. Marias, F. Yang, and M. Tsiknakis. Depression assessment by fusing high and low level features from audio, video, and text. In *6th International Workshop on Audio/Visual Emotion Challenge (AVEC '16)*, 2016.
- [C12] G. Giannakakis, D. Grigoriadis, and M. Tsiknakis. Detection of stress/anxiety state from EEG features during video watching. In *37th Annual International Conference of the IEEE Engineering in Medicine and Biology (EMBC)*, Milano, Italy, 25-29 August 2015.
- [C13] M. Pediaditis, G. Giannakakis, F. Chiarugi, D. Manousos, A. Pampouchidou, E. Christinaki, G. Iatraki, E. Kazantzaki, P. Simos, K. Marias, and M. Tsiknakis. Extraction of facial features

as indicators of stress and anxiety. In *37th Annual International Conference of the IEEE Engineering in Medicine and Biology (EMBC)*, Milano, Italy, 25-29 August 2015.

- [C14] Y. Andreu-Cabedo, P. Castellano, S. Colantonio, G. Coppini, R. Favilla, D. Germanese, G. Giannakakis, D. Giorgi, M. Larsson, and P. Marraccini. Mirror mirror on the wall... an intelligent multisensory mirror for well-being self-assessment. In *IEEE International Conference on Multimedia and Expo (ICME)*, Torino, Italy, 29 June-3 July 2015.
- [C15] E. Christinaki, G. Giannakakis, F. Chiarugi, M. Pediaditis, G. Iatraki, D. Manousos, K. Marias, and M. Tsiknakis. Comparison of blind source separation algorithms for optical heart rate monitoring. In *4th International Conference on Wireless Mobile Communication and Healthcare*, Athens, Greece, 3-5 November 2014.
- [C16] F. Chiarugi, G. Iatraki, E. Christinaki, D. Manousos, G. Giannakakis, M. Pediaditis, A. Pampouchidou, K. Marias, and M. Tsiknakis. Facial signs and psycho-physical status estimation for well-being assessment. In *7th International Conference on Health Informatics*, Angers, France, 3-6 March 2014.

Theses

- [T1] Γ. Γιαννακάκης. Ανάπτυξη μεθόδων ανάλυσης ηλεκτροεγκεφαλογραφήματος με χρήση μοντέλων συνδεσιμότητας και μεγεθών εντροπίας. Διδακτορική διατριβή, Ιατρική Σχολή Πανεπ. Πατρών - Σχολή Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών ΕΜΠ, 2009.
- [T2] Γ. Γιαννακάκης. Ανάλυση Ηλεκτροεγκεφαλογραφικού Σήματος με Εφαρμογές στην Επιληψία και τις Μαθησιακές Δυσκολίες. Μεταπτυχιακή διπλωματική εργασία, Ιατρική Σχολή Πανεπιστημίου Πατρών - Σχολή Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών ΕΜΠ, 2005.
- [T3] Γ. Γιαννακάκης. Ανάπτυξη Συστήματος Υποστήριξης Διάγνωσης Ψυχικών Ασθενειών με χρήση Προκλητών Εγκεφαλικών Δυναμικών. Προπτυχιακή διπλωματική εργασία, Σχολή Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών, ΕΜΠ, 2003.

Citations

Citations: **472**, h-index: **13**, i10-index: **18** (Google scholar)

Google scholar profile <https://scholar.google.gr/citations?user=AR8VwAMAAAAJ>

Awards - honors

- 2020 The article "Stress and anxiety detection using facial cues from videos" was included amongst the top 20 most-cited articles in the Biomedical Signal Processing and Control journal
- 2017-2019 Post-Doctoral Greek State scholarship (2 years) through the action entitled "Reinforcement of Postdoctoral Researchers"
- 2007 Thomaidio Award for the Progress of Arts and Sciences
- 2005 Thomaidio Award for the Progress of Arts and Sciences
- 2003 Award for the best NTUA interdisciplinary undergraduate thesis of year 2003 from Thomaidio Foundation

Organizational Activities

Member of organizing committee of IEEE International Conference on Imaging Systems and Techniques 2008 (Distinguished organization honor)

Member of organizing committee of IEEE 8th International Conference on Bioinformatics and BioEngineering 2008

Charter member of the cultural union Sampajana, Organization of the 1st Sampajana Jazz Festival, Chania, 26-29 June 2012

Member of organizing committee 8th International Conference on the Foundations of Digital Games, Chania, 14-17 May 2013

Scientific Activities

Member of the International Program Committee and Session Chairman in the 19th International Conference on Bioinformatics and BioEngineering 2019 (BIBE2019)

Reviewer

IEEE Engineering in Medicine and Biology Conference (EMBC)
IEEE Transactions on Information Technology in Biomedicine (TITB)
IEEE Transactions on Computational Intelligence and AI in Games
IEEE Transactions on Affective Computing
Elsevier Biomedical Signal Processing and Control
Elsevier Computer Methods and Programs in Biomedicine
IEEE Journal of Biomedical and Health Informatics

Scientific - Professional Societies

Member of the Technical Chamber of Greece
Member of Greek Company of Computer Scientists and Informatics
Educator certification from National Center of Certification
Member of the Chania Developers group

Personal Interests

Theatre Member of NTUA theatre team
2004: «Rosencrantz and Guildenstern are dead» by Tom Stoppard
2005: «Bremer Freiheit» by R. Fassbinder
2006: «Look at them» by M. Pontikas
2007: «Archangels Don't Play Pinball» by Dario Fo

Cinema 2012: Supporting actor in the film «The Two Faces of January» by Hossein Amini
2016: Supporting actor in the short film «Loca» by Maria Papadaki

Music Accordion

Athletics Table tennis, Chess

Other

Car and motorcycle driver license

References

Available upon request

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