Marios Antonakakis

Curriculum Vitae

Dr.-Ing. Marios Antonakakis is an Assistant Professor at the Hellenic Mediterranean University, specializing in Artificial Intelligence and data-driven modeling of complex environmental and energy systems. He holds a Diploma in Electronic and Computer Engineering (2012) and an MSc in Biomedical Engineering (2015) from the Technical University of Crete (TUC) and received his PhD from the Technical University of Ilmenau, Germany (2021). He is currently a research collaborator at the Institute for Biomagnetism and Biosignal Analysis (IBB), Germany, and a postdoctoral researcher at TUC.

His research focuses on signal and image processing, graph-based modeling, and advanced AI methodologies (machine learning, deep learning, and LLMs) for multimodal data analysis and predictive modeling. His work supports applications in environmental monitoring, circular economy, and energy-related systems, including resource optimization, system-level modeling, and digital twins for complex infrastructures.

He has extensive experience in European and national research projects (Horizon Europe, EIT), contributing to the development of AI-driven predictive models and decision-support systems. He is the author of more than 60 scientific publications and has received seven international best paper awards and multiple competitive fellowships (IKY, Onassis Foundation, European Union). He serves as editor in Nature Scientific Reports, guest editor in special issues, and reviewer for more than ten international scientific journals.

Research Interests – Development and application of advanced Artificial Intelligence and data-driven modeling techniques, including machine learning (SVM, kNN, Random Forest, XGBoost), deep learning (CNNs, GANs, Transformers), and large language models (MistralAI, GPT-based models, BERT, Claude Anthropic), for the analysis of complex, multimodal, and spatiotemporal data. Special emphasis is placed on data-centric AI, including noise reduction, missing data imputation, data augmentation, and multimodal data fusion, supporting robust predictive modeling in real-world conditions. Research interests include digital biomarkers, non-invasive diagnostic systems, real-time monitoring and surveillance, time-series forecasting, and object detection, with applications in environmental and energy systems, resource management, and sustainable infrastructures.

Person Information

Title	Dr.-Ing. Biomedical Engineer, M.Sc. Electronic and Computer Engineer
Birth date	1990
Birth place	Heraklion Crete
Tel.	+30 6947739151
Website	https://www.researchgate.net/profile/Marios_Antonakakis
Email	mantonakakis@tuc.gr
Marital status	Married
Children	One
Army duties	Completed

Studies

09/2008 – 09/2013	Diploma in Electrical and Computer Engineering, School of Electrical and Computer Engineering (ECE), Technical University of Crete, Greece (TUC). (GPA: 8.34/10) [Thesis: LINK]
09/2013 – 09/2015	M.Sc. in Electrical and Computer Engineering, School of Electrical and Computer Engineering, Technical University of Crete, Greece. [Thesis: LINK]
08/2016 – 04/2021	Ph.D. in Biomedical Engineering, Institute for Biomagnetism and Biosignalanalysis, University of Münster, Münster, Germany – Institute of Biomedical Engineering and Informatics, Technical University of Ilmenau, Ilmenau, Germany. (GPA: Magna Cum Laude) : [Thesis: EKT, TUI]

Research and Professional Experience

06/2011 – 08/2011	Internship at Hellenic Center of Marine Research – **Development** of a system for mining, visualizing, and storing data from marine sensors
12/2013 – 03/2015	Project participation: EU – "CyberSensors," ECE, TUC. – **Development** of real-time optical image/video processing systems for water management
05/2015 – 09/2015	Project participation: GR - "Large scale evaluation of Phonocardiogram recordings" – Toshiba Corporation, Signal processing laboratory, University of Crete and University Clinic of Heraklion, Heraklion, Crete – **Development** of a machine learning system for the classification of abnormal phonocardiograms
08/2016 – 02/2024	Collaborative Researcher of SIM-NEURO: Stimulation, Imaging and Modeling of NEUROnal networks in the human brain (Head: Prof. Dr. Carsten Wolters), Institute for Biomagnetism and Biosignalanalysis (IBB), Universität Münster, Münster, Germany. Project: EU MSCA ITN ChildBrain: www.childbrain.eu (08.2016-10.2018) – deliverable (https://cordis.europa.eu/project/id/641652/reporting), SPP1665 (11.2018 – 10.2018) – participation in proposal formulation (https://erapermed.isciii.es/wp-content/uploads/2021/01/Newsletter-ERA-PerMed_final.pdf, page 13). – **Development** of a non-invasive epilepsy treatment system using TNS. – **Contributed** to the drafting of the proposal (https://erapermed.isciii.es/wp-content/uploads/2021/01/Newsletter-ERA-PerMed_final.pdf, page 13).
10/2020 – 05/2024	Horizon2020: BUAS - https://borderuas.eu/ – **Development** of a portable, real-time, ultra-high-resolution image/video processing system using a neural network (YOLOv5) for object detection and tracking (people, animals, vehicles) and environmental segmentation.
01/2021 – 08/2021	xVlepsis: A novel system for the intervention of danger situation of neonatal," ECE, TUC. – **Development** of a system for detecting apnea in microphone data using signal processing and machine learning.
10/2021 – 10/2022	Short-time Tenure track position at Special Research Fund Account of Technical University of Crete (proposal writing for Greek and EU calls EDVM – 143 και EDVM – 166, EPIDOCNET, smartHEALTH, I-PAM, PRISM, TREEFENCE
02/2022 – 08/2024	Horizon2020: RE-EURECA-PRO - https://www.eurecapro.eu/re-eureca-pro/ – **Developing** mechanisms to establish a common European technology transfer office.
08/2022 – 12/2023 10/2023 – 01/2025	Gnosi: technology transfer network, Technical University of Crete National: https://smarthealth-edih.eu/ – **Contribution** to the activities of the Technology Transfer Office at the Technical University of Crete
11/2022 – 06/2023	Assis. Prof (short term) Academic Teaching Experience for Young Scientists with PhDs 2022 – 2023 at the Hellenic Mediterranean University – **Teaching** courses in the Department of Electrical Engineering, HMU
03/2023 – 08/2024	Collaborative Researcher, Medicine Dept., Uni. Of Crete Horizon2020: SIMFONIA - https://www.sinfonia-appraisal.eu/#home

– **Development** of an AI-powered chatbot (ChatGPT agent) to provide guidance to nuclear medicine staff and development of predictive models for radiation therapy dose simulation.

11/2023 – 06/2024	Assis. Prof (short term) Academic Teaching Experience for Young Scientists with PhDs 2023 – 2024 at the Hellenic Mediterranean University – **Teaching** courses in the Department of Electrical Engineering, HMU
09/2024 – 09/2025	National: https://smarthealth-edih.eu/ **– Providing** consulting services to health and education media organizations and health agencies, Project Manager
09/2024 – 09/2025	Assis. Prof (short term) Academic Teaching Experience for Young Scientists with PhDs 2024 – 2025 at the Technical University of Crete (TUC) – **Teaching** courses in the Department of Electrical Engineering, HMU
09/2025 – 01/2026	Assis. Prof (short term) Academic Teaching Experience for Young Scientists with PhDs 2025 – 2026 at the Hellenic Mediterranean University (HMU) – **Teaching** courses in the Department of Electrical Engineering, HMU
12/2024 – 12/2025	National: https://safe-aorta.gr/ – **Development** of AI-driven models for the detection / forecasting of Abdominal Aortic Aneurysms, Project Manager
Present Postdoctoral Research Collaborator	• Digital Image and Signal Processing Laboratory, ECE, TUC, Crete GR • IBB, Uni. Of Muenster, Germany • Biomedical Engineering Group, Dept. of Biomedical Engineering, University of Houston, TX, USA • Neuroinformatics group, CUBRIC, Cardiff, UK
Present projects	⇒ EU (06/2024 – present): https://maasivetwinproject.eu/ - Data management and development of supply chain forecasting models for battery manufacturing and rare earth element monitoring.
Successful proposal writing and project coordination	⇒ EU (04/2025 – 12/2025): https://aquasphereproject.eu/ - Project Coordinator - Training and capacity-building for universities on issues related to the blue economy and water resources. ⇒ EU (07/2025 – 04/2027): https://mosaic.tuc.gr/ - Documentation, Highlighting, and Reproduction of Mosaics from (Ecclesiastical) Sites of High Cultural Value ⇒ EU (04/2025 – 12/2025): https://www.hieurecapro.eu/ - Design and delivery of training workshops on digital and green transition, and development of an AI-powered Q&A tool

1. Scholarship Onassis Foundation (2018 – 2021) – PhD Thesis (Budget: 34.000,00€)
2. Co-funded EU – Greek project: smartHEALTH (2021-2024) – Principal Investigator (Budget: 147.660,00),
3. EIT-HEALTH (01/2023 – 12/2023): 'Personalised Real-time Interoperable Sepsis Monitoring (PRISM)' Principal Investigator (Budget: 25.000,00€)
4. Idea Nursery Action, TUC (06/2023 – 11/2023): 'HeartGuard: Non-invasive and multi-sensor system for monitoring and real-time detection of physiological and pathological human biosignal activity' (Budget: 5.000,00€) – Principal Investigator
5. HORIZON – MaasiveTwin (2024 – 2028) – Project Manager (Budget: 643.720,00)
6. GGEK – Emblematic action (2023 – 2025): SAFE-AORTA (Budget: 267.605,00€) - https://safe-aorta.gr/

7. GGEK – Emblematic action (2023 – 2025): Greece4.0 (Budget: 259.986.73€) - https://greece40.gr/
8. Idea Nursery Action, TUC (04/2024 – 11/2024): 'PULSEMIND – Portable Ultra-sensitive Life Sign Evaluation for Monitoring and INsightful Detection' (Budget: 3.000,00€) – Principal Investigator
9. EIT-HEI 2024 – AquaSphere: Empowering Higher Education Institutions (HEIs) Capabilities for Water and Maritime Innovation and Entrepreneurship (Budget: 1.340.000, TUC: 291.500,00 €) – Project Coordinator and Principal Investigator.

Teaching

No	Date	Course
1	2013 – 2015	"Digital signal and image processing biomedical applications" – ECE/TUC, Greece (adjunct teaching)
2	2016 – 2020	"Advanced applications in biomedical engineering" – IBB/WWU, Germany (adjunct teaching)
3	01 – 02 /2021	"Advanced MATLAB courses for computational neuroscientific applications/research" – AAISCS, Cyprus
4	10/2022 – 02/2023	"Algorithms and Complexity", Department of Electronic Engineers, Hellenic Mediterranean University
5	09/2022 – 02/2023	"Computational logic and logic programming", Department of Electronic Engineers, Hellenic Mediterranean University
6	02/2023 – 07/2023	"Graph Theory", Department of Electronic Engineers, Hellenic Mediterranean University
7	09/2023 – 11/2023	"Online Course on Machine/Deep Learning Basics and Applications with Real-Time Hands-on," Silesian University of Technology
8	02/2024 – 09/2024	"Digital Image and Signal Processing", Department of Electronic Engineers, Hellenic Mediterranean University
9	02/2024 – 09/2024	"Renewable Energy Resources", Department of Electronic Engineers, Hellenic Mediterranean University
10	09/2024 – 02/2025	"Biomedical Technology I", Technical University of Crete
11	09/2025 – 02/2026	"Data Structures", Department of Electronic Engineers, Hellenic Mediterranean University
12	02/2026 – 06/2026	"Object Oriented Programming" Department of Electronic Engineers, Hellenic Mediterranean University
13	02/2026 – 06/2026	"Graph Theory", Department of Electronic Engineers, Hellenic Mediterranean University

Scholarship Awards

Academic year	Awarded by
2008 – 2009	Hellenic State Scholarship Foundation
2008 – 2009	Technical University of Crete
2009 – 2010	Technical University of Crete
2010 – 2011	Hellenic State Scholarship Foundation
2018 – 2020	Onassis Foundation

Awards

Date	Awarded by
21/04/2018	Best Poster Award, Conference "50 years of MEG" – ISACM/EMEGS, Poros, Greece

15/08/2016	MARIE SKŁODOWSKA-CURIE Fellowship – μέρος του ευρωπαϊκού έργου "ADVANCING BRAIN RESEARCH IN CHILDREN'S DEVELOPMENTAL NEUROCOGNITIVE DISORDERS (ChildBrain)." https://cordis.europa.eu/project/id/641652/results
23/09/2019	Young Investigator Award, 13th International Conference in Complex Medical Engineering, Dortmund, Germany
11/09/2021	Best Paper Award, 9th Panhellenic Conference of the Hellenic Society of Biomedical Technology (ELEVIT), Thessaloniki, Greece. https://www.elevit.org.gr/images/elevit_2021/proceedings_final_03.pdf (σελ. 125)
27/10/2021	Best Student Paper Award, 21st IEEE International Conference on BioInformatics and BioEngineering, Kragujevac, Serbia. http://www.bibe2021.kg.ac.rs/
27/08/2022	Silver award, Biomag Data Analysis Competition 2022 Epilepsy challenge, 22nd International Conference on Biomagnetism, Birmingham UK, Sept 2022. https://biomag2020.org/awards/data-analysis-competitions/
15/09/2024	1st Place Award in the International EmoRec EEG Challenge https://www.tuc.gr/en/university/in-the-spotlight/item/1st-place-award-in-the-international-emotion-recognition-challenge-from-eeg-signals

Running membership

Since 11/2020	IEEE member (IEEE – αριθμός μέλους: 95603306)
Since 12/2020	EEG and Clinical Neuroscience Society member (http://www.ecnsweb.org/)
Since 01/2021	Mentor for the Greek Chapter of IEEE EMB (https://r8.ieee.org/greece-embs/members/)
since 01/2020	Member of the Hellenic Biomedical Society ELEVIT
since 05/2025	General Secretary for Clinical Biomedical Engineering, ELEVIT

Internationalal Conference Organization

Αριθμός	Ημερομηνία	Conference Information
1	07/2024	IISA 2024 - The Fifteenth International Conference on Information, Intelligence, Systems and Applications, https://easyconferences.eu/iisa2024/
2	10/2024	IST2024 – IEEE International Conference on Imaging Systems and Techniques, https://ist2024.ieee-ims.org/about/conference-organizers
3	05/2025	IEEE MeMeA – IEEE Medical Measurements and Applications https://memea2025.ieee-ims.org/about/organizing-committee
4	10/2025	IST2025 – IEEE International Conference on Imaging Systems and Techniques, https://ist2025.ieee-ims.org/about/conference-organizers
5	11/2025	BIBE2024 – IEEE International Conference on International Conference on Bioinformatics & Bioengineering, https://easyconferences.eu/bibe2025/committees/
6	06/2026	AIAI2026 – Artificial Intelligence Applications and Innovation, https://ifipaiai.org/2026/committees/

Symposium / Workshop organization

No	Date	Organizing committee / Information
1	08/2017	MC Piastra, **M Antonakakis**, S Homölle. FieldTrip workshop, Pre-conference training courses at the BACI2017 conference in Bern, Switzerland, http://www.baci-conference.com
2	07/2019	A Thielscher, M Siniatchkin, R Salvador, O Puonti, Miranda, S Makarov, **M Antonakakis**. Transcranial Direct Current Stimulation in Adolescents and Adults: Towards a Precision Medicine Approach Based on Numerical Models Invited Session. 41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Berlin, Germany.

		https://embs.papercept.net/conferences/conferences/EMBC19/program/EMBC19_ContentListWeb_3.html
3	10/2019	G Giannakakis and **M Antonakakis**. Spatiotemporal computational neuroimaging methods (EEG, MEG, MRI, etc.) in epilepsy. 19th International Conference of the IEEE in Bioinformatics and Bioengineering, Athens, Greece. https://bibe2019.ics.forth.gr/participation/special-session-spatiotemporal-computational-neuroimaging-methods-in-epilepsy/
4	10/2021	**M Antonakakis**, SI Dimitriadis. Sensor/Source space functional connectivity of brain disorders on the basis of realistic head modeling. BACI2021 conference, Virtual, http://www.baci-conference.com
5	09/2022	**M Antonakakis** and M Zervakis. Biomedical image and signal methods and applications for analysing human abnormal body responses. IEEE BHI-BSN 2022, https://bhi-bsn-2022.org/?page_id=3212
6	09/2023	**M Antonakakis**. Modeling and analysis of electrophysiological recordings for the characterization of pathological brain activity. 6th Basic and Clinical multimodal Neuroimaging (BaCI) International Conference, Istanbul, Turkey. https://baci-conference2023.com/
7	10/2023	**M Antonaakis**, Digital health services to facilitate non-invasive diagnostics of brain diseases. 10th Panhellenic Conference on Biomedical Technology, Thessaloniki, Greece, October 2023. http://www.elevit.org.gr/
8	10/2023	P Natsiavas, A Dimitriadis, **M Antonkakis**, Interlinking companies and public organizations with research community in the context of smart health – The case of smartHEALTH EDIHs. 10th Panhellenic Conference on Biomedical Technology, Thessaloniki, Greece, October 2023. http://www.elevit.org.gr/
9	01/2024	**M Antonakakis, K Politof**, Accurate localization of brain activity through finite elements and deep learning techniques. smartHEALTH – Annual Forum, NCSRD, Athens, Greece, January 2024 https://smarthealth-edih.eu/2024/03/05/ethsio-forum-europaikou-komvou/
10	04/2024	**M Antonakakis**, Electromagnetic activity analysis for non-invasive diagnosis of brain disorders. 18th Neurology Symposium, Heraklion, Greece, April 2024. https://acne.gr/
11	05/2025	C Manopoulos, G Stavroulakis, N Diangelakis and **M Antonakakis**. The role of computational models and artificial intelligence for digital twins in non-invasive diagnosis of brain and heart diseases. In 11th Panhellenic Conference on Biomedical Technology, Athens, Greece, May 2025.
12	05/2025	C Karamanis, I Gkouzionis, G Lontos and **M Antonakakis**. Digital health services to facilitate non-invasive diagnostics of brain diseases. In 11th Panhellenic Conference on Biomedical Technology, Athens, Greece, May 2025.

Running Editorial Scientific Journal Contribution

No	Date		Journal
1	12/2021 12/2023	–	MDPI – International Journal of Environmental Research and Public Health (Impact factor: 4.614), Special Issue "Special Issue "Neurodiseases and Public Health." https://www.mdpi.com/journal/ijerph/special_issues/neuro_disease_health
2	01/2022		MDPI – Sensors (Impact factor: 3.847). Special Issue "Advances on UAV-Based Sensing and Imaging." https://www.mdpi.com/journal/sensors/special_issues/UAV_SI
3	08/2023		Elsevier – "Brain Organoid and Systems Neuroscience Journal", https://www.sciencedirect.com/journal/brain-organoid-and-systems-neuroscience-journal/about/editorial-board
4	08/2023		MDPI – Multiple Sensor Signal and Image Processing for Clinical Application. Special Issue "Multiple Sensor Signal and Image Processing for Clinical Application," https://www.mdpi.com/journal/sensors/special_issues/INH955Q9N2
5	04/2025		Springer Nature: Scientific Reports (Impact factor: 5.133), https://www.nature.com/srep/about/editors
6	09/2025		Springer Nature: Scientific Reports (Impact factor: 5.133), Special Issue https://www.nature.com/collections/jcbhafgdgi/guest-editors

Book chapters

No	Date	Authors / Book chapter information
1	08/2021	CH Wolters, **M Antonakakis**, MC Piastra, A Khan, J Vorwerk. Characterization of the somatosensory system. Springer Nature Special Issue of the Neuromethods on "Translational Methods for Multiple Sclerosis Research." Springer – Neuromethods (https://www.springer.com/gp/book/9781071612125).
2	01/2024	SK Varun, TK Reddy, **M Antonakakis**, Michelis Zervakis. Chapter 9 - Source localization of epileptiform MEG activity towards intelligent smart healthcare: a retrospective study. "Data Fusion Techniques and Applications for Smart Healthcare" https://www.sciencedirect.com/book/9780443132339/data-fusion-techniques-and-applications-for-smart-healthcare#book-info
3	09/2024	Athanasakis, I, Myttas D, Katsilieris T, Bellou E, Zervakis M, **Antonakakis M**, et al. (2025). BorderUAS Project: Semiautonomous Border Surveillance Platform Combining a Lighter-Than-Air (LTA) Unmanned Aerial Vehicle (UAV) with Ultra-High-Resolution Multisensor Surveillance Payload: A Comprehensive Overview. In: Gkotsis, I., Kavallieros, D., Stoianov, N., Vrochidis, S., Diagourtas, D., Akhgar, B. (eds) Paradigms on Technology Development for Security Practitioners. Security Informatics and Law Enforcement. Springer, Cham. https://doi.org/10.1007/978-3-031-62083-6_32

Open data / methodology

No	Date	Authors/ Publisher information
1	06/2020	Piastra, M. C., Schrader, S., Nüßing, A., **Antonakakis, M.,** Medani, T., Wollbrink, A., Engwer, C., & Wolters, C. H. (2020). The WWU DUNEuro reference data set for combined EEG/MEG source analysis [Data set]. Zenodo. https://doi.org/10.5281/zenodo.3888381
2	09/2024	Erdbrügger, T., **Antonakakis, M.**, Aydin, Ü., Westhoff, A., Höltershinken, M., Vorwerk, J., Schrader, S., Radecke, J.-O., Wagner, S., Medani, T., Piastra, M. C., Khan, A., Neugebauer, F., Pursiainen, S., Engwer, C., & Wolters, C. H. (2024). The University of Münster DUNEuro-based pipeline to create personalized head models with calibrated skull conductivity for EEG/MEG source analysis and optimized multi-channel tES. Zenodo. https://doi.org/10.5281/zenodo.13788989

Journal publication

Google scholar: https://scholar.google.ca/citations?user=27KeZXMAAAAJ&hl=en
ResearchGate: https://www.researchgate.net/profile/Marios-Antonakakis

No	Date	Authors/Journal Name / Article details
1	05/2014	M Vourkas, E Karakonstantaki, PG Simos, V Tsirka, **M Antonakakis**, M Vamvoukas, C Stam, S Dimitriadis, S Micheloyannis: Simple and difficult mathematics in children. A Minimum Spanning Tree EEG network analysis. Neuroscience Letters 576: 28-33.
2	12/2015	**M Antonakakis**, M Zervakis, CEM van Bijsterveldt, DI Boomsma, EJC De Geus, S Micheloyannis, and DJA Smit. Genetic effects on source level phase-locked and phase-independent brain responses in a visual oddball task. Biological Phycology, 114: 69–80.
3	02/2016	**M Antonakakis**, SI Dimitriadis, M Zervakis, R Rezaie, A Babajani-Feremi, S Micheloyannis, G Zouridakis and AC Papanicolaou: Altered Cross-frequency Coupling in Resting-State MEG after Mild Traumatic Brain Injury. Int J Psychophysiol, 102:1–11.
4	07/2017	**M Antonakakis**, SI Dimitriadis, M Zervakis, AC Papanicolaou, G Zouridakis: Reconfiguration of Dominant Coupling Modes in Mild Traumatic Brain Injury Mediated by δ-band Activity: a Resting State MEG Study. Neuroscience 356:275–286.

5	08/2017	**M Antonakakis**, SI Dimitriadis, M Zervakis, AC Papanicolaou, G Zouridakis: Altered Rich-Club and Frequency-Dependent Subnetwork Organization in Mild Traumatic Brain Injury: A MEG Resting-State Study. Front Hum Neurosci 11:416.
6	12/2017	SI Dimitriadis, **M Antonakakis**, PG Simos, JM Fletcher and AC Papanicolaou: Data-driven Topological Filtering based on Orthogonal Minimal Spanning Trees: Application to Multi-Group MEG Resting-State Connectivity. Brain Connectivity 7(10):661-670.
7	08/2019	**M Antonakakis**, S Schrader, A Wollbrink, R Oostenfeld, S Rampp, J Haueisen, CH Wolters. Source reconstruction of somatosensory P20/N20 component: comparison of stimulation types, head models and measurement modalities. Hum Brain Mapp. 2019; 1– 18.
8	01/2020	**M Antonakakis**, SI Dimitriadis, M Zervakis, AC Papanicolaou, G Zouridakis: Aberrant Whole-Brain Transitions and Dynamics of Spontaneous Network Microstates in Mild Traumatic Brain Injury. Front Comput Neurosci. 2020; 13:90.
9	09/2020	**M Antonakakis**, S Schrader, Ü Aydin, A Khan, J Gross, M Zervakis, S Rampp, CH Wolters. Inter-Subject Variability of Skull Conductivity and Thickness in Calibrated Realistic Head Models. NeuroImage, 223, 17353.
10	10/2020	S Schrader, **M Antonakakis** , S Rampp, C Engwer, C Wolters CH. A novel method for calibrating head models to account for variability in conductivity and its evaluation in a sphere model. Phys Med Biol. doi: 10.1088/1361-6560/abc5aa.
11	11/2020	A Rezaei, **M Antonakakis**, MC Piastra, CH Wolters, S Pursiainen. Parametrizing the Conditionally Gaussian Prior Model for Source Localization with Reference to the P20/N20 Component of Median Nerve SEP/SEF. Brain Sci., 10(12), 934; doi.org/10.3390/brainsci10120934.
12	10/2021	A Khan, **M Antonakakis**, N Vogenauer, J Haueisen, CH Wolters. Individually optimized multi-channel tDCS for targeting somatosensory cortex. Clin Neurophysiol. 2022 Feb; 134:9-26. doi: 10.1016/j.clinph.2021.10.016.
13	12/2021	A Rezaei, J Lahtien, F Neugebauer, **M Antonakakis**, MC Piastra, A Koulouri, CH Wolters, S Pursiainen.Reconstructing subcortical and cortical somatosensory activity via the RAMUS inverse source analysis technique using median nerve SEP data. Neuroimage. 2021 Dec 15; 245:118726. doi: 10.1016/j.neuroimage.2021.118726.
14	12/2021	F Neugebauer, **M Antonakakis**, K Unnwongse, Y Parpaley, J Wellmer, S Rampp, and CH Wolters. Validating EEG, MEG and combined MEG and EEG beamforming for an estimation of the epileptogenic zone in focal cortical dysplasia. Accepted for publication MDPI Brain Sciences.
15	01/2022	K. Kumar Singh, S Kumar, **M Antonakakis**, K. Moirogiorgou, A Deep, KL Kashyap, M Kumar Bajpai, M Zervakis. Deep Learning Capabilities for the Categorization of Microcalcification. Int. J. Environ. Res. Public Health 2022, 19, 2159.
16	02/2022	NG Bourbakis, K Michalopoulos, **M Antonakakis**, M Zervakis, A New Multi-resolution Approach to EEG Brain Modeling Using Local-Global Graphs and Stochastic Petri-Nets. Int J Neural Syst 26;2250006.
17	02/2022	G Kampas, A Vasileiou, **M Antonakakis**, M Zervakis, E G Spanakis, V Sakkalis, PLeškovský, S S Carballido, R Gliga, D Vinković, B Pečnik. Design of Sensors' Technical Specifications for Airborne Surveillance at Borders. Journal of Defence & Security Technologies, 5(4) - 4, 58-83.
18	11/2022	NJ Simos, K Manolitsi, EA Stamatakis, AI Luppi, **M Antonakakis**, A Kagialis, M Zervakis, D Antypa, E Kavroulakis, TG Maris, A Vakis, and E Papadaki. Chronic mild traumatic brain injury: Aberrant static and dynamic connectomic features identified through machine learning model fusion. Neuroinform (2022). https://doi.org/10.1007/s12021-022-09615-1
19	12/2022	A Khan, **M Antonakakis**, SS Krüger, R Lencer, M Nitsche, W Paulus, J Gross, CH. Wolters. Can individually targeted and optimized multi-channel tDCS outperform standard bipolar tDCS in stimulating the primary somatosensory cortex? Brain Stimulation 16(1):1-16. https://doi.org/10.1016/j.brs.2022.12.006
20	11/2022	T Medani, J Garcia-Prieto, F Tadel, **M Antonakakis**, TErdbrugger, M Holtershinken, W Mead, S Schrader, A Joshi, C Engwer, CH Wolters, JC

		Mosher, RM Leahy. Brainstorm-DUNEuro: An integrated and user-friendly Finite Element Method for modeling electromagnetic brain activity, NeuroImage (2023), doi: https://doi.org/10.1016/j.neuroimage.2022.119851
21	02/2023	A Karasmanoglou, **M Antonakakis**, M Zervakis. ECG-based Semi-supervised Anomaly Detection for early detection and monitoring of epileptic seizures. Int. J. Environ. Res. Public Health 2023, 20(6), 5000; https://doi.org/10.3390/ijerph20065000
22	01/2024	Karittevlis C, Papadopoulos M, Lima V, Orphanides GA, Tiwari S, **Antonakakis M**, Papadopoulou Lesta V, Ioannides AA. First activity and interactions in thalamus and cortex using raw single-trial EEG and MEG elicited by somatosensory stimulation. Front Syst Neurosci. 2024 Jan 5;17:1305022. doi: 10.3389/fnsys.2023.1305022.
23	02/2024	**M Antonakakis**, F Kaiser, S Rampp, S Kovac, H Wiendl, W Stummer, J Gross, C Kellinghaus, M Khaleghi-Ghadiri, G Möddel, C H. Wolters. Targeted and optimized multi-channel transcranial direct current stimulation for focal epilepsy: An N-of-1 trial. Brain Stimul. 2024, 17(2):221-223. doi: 10.1016/j.brs.2024.02.010
24	09/2024	A Karasmanoglou, G Giannakakis, P Vorgia, **M Antonakakis**, M Zervakis. Semi-Supervised Anomaly Detection for the Prediction and Detection of Pediatric Focal Epileptic Seizures on fused EEG and ECG data. Biomedical Signal Processing and Control, Vol. 101, 107083. doi: https://doi.org/10.1016/j.bspc.2024.107083
25	11/2024	Katehakis DG, Filippidis D, Karamanis K, Kouroubali A, Farmaki A, Natsiavas P, Krithara A, Christodoulou EG, **Antonakakis M** and Plexousakis D (2024) The smartHEALTH European Digital Innovation Hub experiences and challenges for accelerating the transformation of public and private organizations within the innovation ecosystem. Front. Med. 11:1503235. doi: 10.3389/fmed.2024.1503235
26	12/2024	**Antonakakis M**, Zervakis M. Advances in Unmanned Aerial Vehicle-Based Sensing and Imaging. Sensors. 2024; 24(24):8094. https://doi.org/10.3390/s24248094
27	12/2025	SK Varun, TK Reddy Bollu, S Panwar, P Agarwal, CT Lin, **M Antonakakis**, M Zervakis. n-cylindrical Symbolic Response, a standalone and synergistic biomarker for Epilepsy diagnosis on EEG modality. IEEE J Biomed Health Inform. 2025 Nov 24; doi: 10.1109/JBHI.2025.3635229

International Conference publications/Posters

Google scholar: https://scholar.google.ca/citations?user=27KeZXMAAAAJ&hl=en
ResearchGate: https://www.researchgate.net/profile/Marios-Antonakakis

No	Date	Authors/Conference Name / Article details
1	11/2013	**M Antonakakis**, G Giannakakis, M Tsiknakis, S Micheloyannis and M Zervakis. Synchronization coupling investigation using ICA cluster analysis in resting MEG signals in Reading Difficulties. 13th International Conference of the IEEE in Bioinformatics and Bioengineering, Chania, Greece.
2	11/2014	**M Antonakakis**, V Tsirka, M Zervakis and S Micheloyannis. A Minimal Spanning Tree Analysis of EEG Responses to Complex Visual Stimuli. 26th IEEE International Conference on Tools with Artificial Intelligence, Limassol, Cyprus.
3	05/2015	**M Antonakakis**, V Tsirka, SI Dimitriadis, S Micheloyannis and M Zervakis. Rich Club Differentiation of Phase Synchronization EEG Responses. 6th Panhellenic Conference on Biomedical Technology, Athens, Greece, May, 2015.
4	08/2015	**M Antonakakis**, SI Dimitriadis, M Zervakis, R Rezaie, A Babajani-Feremi, S Micheloyannis and AC Papanicolaou. Comparison of Brain Network Models using Cross-Frequency Coupling and Attack Strategies. 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Milan, Italy.
5	09/2015	K Moirogiorgou, S Nerantzaki, G Livanos, **M Antonakakis**, NP Nikolaidis, EGM Petrakis, AE Savakis, G Giakos, M Zervakis and K Mania. Color

		Characteristics for the Evaluation of Suspended Sediments. 12th annual International Conference on Imaging Systems and Techniques (IST), Macau, China.
6	09/2015	G Livanos, K Moirogiorgou, **M Antonakakis**, EGM Petrakis, AE Savakis, M Zervakis, G Giakos and S Shrestha. Lung Tissue Evaluation Detecting and Measuring Morphological Characteristics of Cell Regions. 12th annual International Conference on Imaging Systems and Techniques (IST), Macau, China.
7	08/2016	**M Antonakakis**, SI Dimitriadis, M Zervakis, R Rezaie, A Babajani-Feremi, AC Papanicolaou and G Zouridakis. Mining Cross-Frequency Coupling Microstates from Resting State MEG: An Application to Mild Traumatic Brain Injury. Comparison of Brain Network Models using Cross-Frequency Coupling and Attack Strategies. 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Orlanto, Florida, USA.
8	10/2016	**M Antonakakis**, SI Dimitriadis, M Zervakis, AC Papanicolaou and G Zouridakis. Improving the Detection of mTBI Via Complexity Analysis in Resting – State Magnetoencephalography. International Conference on Imaging Systems and Techniques, Chania, Greece.
9	08/2017	**M Antonakakis**, S Schrader, J Haueisen and CH Wolters. Combined EEG/MEG source reconstruction of electric, hapto-tactile and pneumato-tactile somatosensory stimulation using realistic head volume conductor modelling. International Conference on Basic and Clinical Multimodal Imaging.
10	03/2018	**M Antonakakis**, S Schrader, A Khan, J Haueisen, R Oostenveld, CH Wolters. Age-related skull conductivity determined by a calibration procedure using combined somatosensory evoked potentials and fields and a realistic head model. Biosignale, Erfurt, Germany.
11	04/2018	**M Antonakakis**, R Oostenveld, J Wellmer, G Moddel, J Haueisen, S Rampp, CH Wolters. Age-related skull conductivity estimated by a calibration procedure using combined somatosensory evoked potentials and fields on realistic head models. 50 years of MEG, Poros, Greece. 3rd best poster. (**3rd best poster**).
12	08/2018	**M Antonakakis**, SI Dimitriadis, M Zervakis, AC Papanicolaou and G Zouridakis. Increased Repertoire of Network Microstates in δ frequency for mild traumatic brain injury subjects: A MEG Beamformed Connectivity Analysis. 21st International Conference on Biomagnetism (Biomag2018), Philadelphia, Pennsylvania, USA.
13	08/2018	**M Antonakakis**, A Wollbrink, A Khan, M Zervakis, W Paulus, M Nitsche, R Lencer, S Suntrup-Krueger, J Haueisen, CH Wolters. Individual targeting and optimization of multi-channel transcranial electric stimulation of the human primary somatosensory cortex. 21st International Conference on Biomagnetism (Biomag2018), Philadelphia, Pennsylvania, USA.
14	07/2019	**M Antonakakis**, A Wollbrink, A Khan, M Zervakis, W Paulus, M Nitsche, R Lencer, S Suntrup-Krueger, T Schneider, C Herrmann, J Haueisen, CH Wolters. Individual targeting and optimization of multi-channel transcranial electric stimulation of the human primary somatosensory cortex. 41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Berlin, Germany.
15	07/2019	A Khan, **M Antonakakis**, N Vogenauer, A Wollbrink, S Suntrup-Krueger, TR Schneider, CS Herrmann, M Nitsche, W Paulus, J Haueisen, CH Wolters. Constrained maximum intensity optimized multi-electrode tDCS targeting of human somatosensory network. 41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Berlin, Germany.
16	09/2019	**M Antonakakis**, S Rampp, J Wellmer, CH Wolters. Combined EEG/MEG Connectivity Analysis in presurgical epilepsy diagnosis. Summer School on Imaging in Epilepsy, Epilepsy Surgery and Epilepsy Research, Bochum, Germany.
17	10/2019	**M Antonakakis**, S Rampp, C Kellinghaus, CH Wolters, G Möddel. Individualized targeting and optimization of multi-channel transcranial direct current stimulation in drug-resistant epilepsy. 19th International Conference of the IEEE in Bioinformatics and Bioengineering, Athens, Greece.
18	10/2019	K Politof, **M Antonakakis,** A Wollbrink**,** M Zervakis, CH Wolters. Effective Connectivity in the Primary Somatosensory Network using Combined EEG

		and MEG. 19th International Conference of the IEEE in Bioinformatics and Bioengineering, Athens, Greece.
19	10/2019	VS Dimakopoulos, **M Antonakakis**, G Moeddel, J Wellmer, S Rampp, M Zervakis, CH Wolters. Combined EEG/MEG Source Reconstruction of Epileptic Activity using a Two-Phase Spike Clustering Approach. 19th International Conference of the IEEE in Bioinformatics and Bioengineering, Athens, Greece.
20	04/2020	A Khan, **M Antonakakis**, TR Schneider, CH Carsten. P120 Combined EEG/MEG targeting and multi-electrode individually optimized tDCS stimulation of the human somatosensory network. Clinical Neurophysiology 131(4):e79-e80.
21	04/2020	VS Dimakopoulos, **M Antonakakis**, CH Wolters, M Zervakis,. P69 Combined EEG & MEG Source Analysis coupled with a Two - Phase Spike Clustering Approach: A multifocal epilepsy case. Clinical Neurophysiology 131(4):e212-e213.
22	09/2020	G Sdoukopoulou, **M Antonakakis**, CH Wolters, and M Zervakis. Preprocessing Techniques on Combined EEG and MEG Data of a Drug-Resistant Epilepsy Case. Society of Applied Neuroscience (SAN2020), Thessaloniki, Greece.
23	02/2021	T Medani, J Garcia-Prieto, F Tadel, S Schrader, **M Antonakakis**, A Joshi, C Engwer, C H Wolters, J C Mosher, R M Leahy. Realistic head modeling of electromagnetic brain activity: an integrated Brainstorm-DUNEuro pipeline from MRI data to the FEM solutions. Medical Imaging 2021: Physics of Medical Imaging
24	04/2021	**M Antonakakis**, S Rampp, M Zervakis, J Wellmer, CH Wolters. Dynamic effective connectivity of combined EEG/MEG sources in pharmacoresistant epilepsy. 10th International IEEE EMBS Conference on Neural Engineering.
25	04/2021	**M Antonakakis**, S Rampp, G Moeddel, CH Wolters. Head modeling effects on the individualized targeting and optimization of multi-channel TES in pharmacoresistant epilepsy. 10th International IEEE EMBS Conference on Neural Engineering.
26	04/2021	K Politof, **M Antonakakis**, A Wollbrink, CH Wolters, M Zervakis. Reconstruction of the Very Early Thalamo-Cortical Network with Combined EEG and MEG on Realistic Head Modeling. 10th International IEEE EMBS Conference on Neural Engineering.
27	04/2021	G Sdoukopoulou, **M Antonakakis**, S Rampp, V Sakkalis, J Wellmer, CH Wolters and M Zervakis. Cluster-based Combined EEG/MEG Source Analysis of High Frequency Oscillatory Activity from a Multi-Focal Epilepsy Case. 10th International IEEE EMBS Conference on Neural Engineering.
28	09/2021	M Papadogiorgaki, M Venianaki, P Charonyktakis, **M Antonakakis**, I Tsamardinos, M Zervakis, V Sakkalis, Heart Rate Classification Using ECG Signal Processing and Machine Learning. 21st International Conference of the IEEE in Bioinformatics and Bioengineering, Kragujevac, Servia.
29	09/2021	**M Antonakakis**, K Politof, G Klados, G Sdoukopoulou, S Schiza, M Papadogiorgaki, C Farmaki, M Pediaditis, M Zervakis, V Sakkalis. A New Multi-Feature Classification Scheme for Normal and Abnormal Respiratory Sounds Discrimination. 21st International Conference of the IEEE in Bioinformatics and Bioengineering, Kragujevac, Servia. (**Best Paper Award**)
30	09/2021	**M Antonakakis**, K Politof, G Klados, G Sdoukopoulou, S Schiza, C Farmaki, M Pediaditis, M Zervakis, V Sakkalis. Classification of Normal and Abnormal Respiratory Sounds with A New Multi-Feature Classification Scheme. 9th Panhellenic Conference on Biomedical Technology, Thessaloniki, Greece.
31	09/2021	NJ Simos, **M Antonakakis,** E Papadaki, and M Zervakis Classification of resting-state fMRI functional network disturbances from Patients with mild Traumatic Brain Injuries. 9th Panhellenic Conference on Biomedical Technology, Thessaloniki, Greece. (**Best Paper Award**)
32	09/2021	G Sdoukopoulou, **M Antonakakis**, G Moeddel, CH Wolters, M Zervakis. Interictal Spike Classification in Pharmacoresistant Epilepsy using Combined EEG and MEG. 21st International Conference of the IEEE in Bioinformatics and Bioengineering, Kragujevac, Servia.
33	06/2022	**M Antonakakis**, K Tsakos, A Tzavaras, E.G Spanakis, V Sakkalis, E Petrakis, M Zervakis. Real-Time Object Detection using an Ultra-High-Resolution

Camera on Embedded Systems. 2022 Annual Int. Conf. on Imaging Systems and Techniques (IST), Kaohsiung, Taiwan

34 06/2022 A Karasmanoglou, **M Antonakakis**, M Zervakis. Towards a heatmap-based explanation of YOLOv5 object detection results with Layer-wise Relevance Propagation. 2022 Annual Int. Conf. on Imaging Systems and Techniques (IST), Kaohsiung, Taiwan

35 09/2022 **M Antonakakis**, SI Dimitriadis, M Zervakis, AC Papanicolaou and G Zouridakis. Characterization of mild Traumatic Brain Injuries with Network Microstates of Dominant Functional Connectivity from MEG-based Beamformed Connectivity Analysis. 22nd Int. Conf. on Biomagnetism (Biomag2022), Birmingham, UK

36 09/2022 K Politof, **M Antonakakis**, SI Dimitriadis, M Zervakis, and G Zouridakis. Characterization of Mild Traumatic Brain Injury using Finite Element Head Modeling and Fused EEG/MEG Source Connectivity Analysis .22nd Int. Conf. on Biomagnetism (Biomag2022), Birmingham, UK

37 09/2022 F Kaiser, **M Antonakakis**, S Rampp, C Kellinghaus, S Kovac, J Gross, G Moeddel, C Wolters. Combined EEG/MEG and optimized transcranial direct current stimulation for non-invasive diagnosis and therapy of focal epilepsy. 22nd Int. Conf. on Biomagnetism (Biomag2022), Birmingham, UK

38 09/2022 A Karasmanoglou, **M Antonakakis**, M Zervakis. Monitoring short-time novelty of Electrocardiogram signals for epileptic seizure anticipation using Unsupervised Anomaly Detection. IEEE BHI-BSN 2022, Ioannina, Greece.

39 09/2022 M Ravilla-Vallejo, C Gomez, H Robert, **M Antonakakis**, S Dimitriadis, J Poza. Neural Functional Connectivity of Patients with Mild Cognitive Impairment using Finite Element Source Analysis. IEEE BHI-BSN 2022, Ioannina, Greece.

40 07/2023 G Torakis, **M Antonakakis**, E Bei, V Sakkalis, M Zervakis. Design of a multi-feature classification scheme for infant epileptic seizures. 45th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Sydney, Australia.

41 07/2023 A Delatolas, **M Antonakakis**, V Sakkalis, C Wolters, M Zervakis. EEG Source Analysis with a Convolutional Neural Network and Finite Element Analysis. 45th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Sydney, Australia.

42 09/2023 A Karasmanoglou, **M Antonakakis**, M Zervakis. Semi-Supervised Seizure Detection in EEG Recordings using Deep Autoencoder Representations and Anomaly Detection Methods. 6th Basic and Clinical multimodal Neuroimaging (BaCI) International Conference, Istanbul, Turkey.

43 10/2023 E Zahariadis, **M Antonakakis**, M Zervakis. Wildforest Fire Detection with ShRe-Xception Network on Aerial Optical and Infrared Images. 2023 Annual Int. Conf. on Imaging Systems and Techniques (IST), Copenhagen, Denmark.

44 10/2023 **M Antonakakis,** C Trimas, M Zervakis. A Two-Phase ResNet for Object Detection in Aerial Images. 2023 Annual Int. Conf. on Imaging Systems and Techniques (IST), Copenhagen, Denmark.

45 10/2023 G Tzedakis, E Tzamali, E. Spanakis, **M Antonakakis**, M Zervakis, V Sakkalis. Comparing YOLO-based Detectors for Pedestrian and Car Detection in Aerial Static Video: An Evaluation of Generalization Capacity and Performance. 2023 Annual Int. Conf. on Imaging Systems and Techniques (IST), Copenhagen, Denmark.

46 10/2023 A. Karasmanoglou, G. Giannakakis, P. Vorgia, **M. Antonakakis**, and M. Zervakis. Anomaly detection on heart-rate variability of paediatric patients with focal epilepsy for seizure detection. In 10th Panhellenic Conference on Biomedical Technology, Thessaloniki, Greece, October 2023.

47 12/2023 A Karasmanoglou, **M Antonakakis**, M Zervakis. Unsupervised Detection of Seizure-Related Dynamic alterations with Autoencoder-derived Deep Features. 23st International Conference of the IEEE in Bioinformatics and Bioengineering, Virtual.

48 12/2023 P Mishra, **M Antonakakis**, K Kumar Singh and M Zervakis. Colour Prediction using Vision Transformer and Continous Wavelet Transform on EEG signals. 23st International Conference of the IEEE in Bioinformatics and Bioengineering, Virtual.

49 09/2024 **M Antonakakis**, F Kaiser, S Rampp, S Kovac, H Wiendl, W Stummer, J Gross, C Kellinghaus, M Khaleghi-Ghadiri, G Möddel, CH Wolters, Personalized

		transcranial Direct Current Stimulation Driven by Combined EEG/MEG Source Analysis for Non-Invasive Therapy of Focal Epilepsy. 15th European Epilepsy Congress, September, 2024
50	09/2024	A Tsipourakis, **M Antonakakis**, F Kaiser, S Rampp, S Kovac, C Kellinghaus, G Möddel, CH Wolter, M Zervakis. The effect of transcranial Direct Current Stimulation on Dynamic Effective Connectivity EEG Patterns of a Focal Epilepsy Case. 15th European Epilepsy Congress, September, 2024.
51	09/2024	A Karasmanoglou, **M Antonakakis,** G Giannakakis, M Zervakis, P Vorgia. Unsupervised Seizure Detection in EEG An Unsupervised Interprable Framework for Seizure detection in EEG, ECG recordings using Changepoint Detection and Integrated Gradients. 15th European Epilepsy Congress, September, 2024. https://onlinelibrary.wiley.com/doi/full/10.1111/epi.18151
52	09/2024	A Karasmanoglou, M Zervakis, **M Antonakakis**. Unsupervised Seizure Detection in EEG Data Using Deep Autoencoder-Derived Features and Symbolic Dynamics. 15th European Epilepsy Congress, September, 2024. https://onlinelibrary.wiley.com/doi/full/10.1111/epi.18151
53	09/2024	G. Giannakakis, A. Karasmanoglou, M. Antonakakis, P. Vorgia and M. Zervakis, "Emotion Recognition Based on EEG Signals and Deep Neural Networks Architectures," 2024 12th International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW), Glasgow, United Kingdom, 2024, pp. 189-192, doi: 10.1109/ACIIW63320.2024.00038 **(Best Paper Award)**
54	11/2024	A Tsipourakis, **M Antonakakis**, F Kaiser, S Rampp, S Kovac, C Kellinghaus, G Möddel, CH Wolter, M Zervakis. The Effect of Multi-Channel tDCS on the Directed Connectivity Patterns of a Case with Focal Epilepsy using A Multi-Feature Machine Learning Evaluation. 24th International Conference of the IEEE in Bioinformatics and Bioengineering, Kragujevac, Servia.
55	11/2024	E Katsoupis, A Karasmanoglou, M Zervakis, **M Antonakakis**. PulSense: An AI-driven Cardiovascular Monitoring and Arrhythmia Detection System. 24th International Conference of the IEEE in Bioinformatics and Bioengineering, Kragujevac, Servia.
56	05/2025	E Bei, K Politof, K Moirogiorgou, **M Antonakakis** and Michalis Zervakis.In Morphological Analysis of Intraluminal Thrombus of Abdominal Aortic Aneurysm. 11th Panhellenic Conference on Biomedical Technology, Athens, Greece, May 2025.
57	05/2025	M Abadi, T Houari, B Benarabi, N Zerhouni, M Zervakis and **M Antonakakis.** Vision Transformer for Thyroid Ultrasound Image Classification. In 11th Panhellenic Conference on Biomedical Technology, Athens, Greece, May 2025.
58	05/2025	S Naka, **M Antonakakis** and Michalis Zervakis. ViTSeg – A Whole Heart Image Segmentation Model using Vision Transformers. In 11th Panhellenic Conference on Biomedical Technology, Athens, Greece, May 2025.
59	05/2025	S Kavvouras, **M Antonakakis**, K Politof, SI Dimitriadis, M Zervakis, A Papanikolaou, G Zouridakis. Detecting mild Traumatic Brain Injuries on Magnetoencephalography using Graph Convolutional Networks and Phase Synchronization. 20th edition of the IEEE International Symposium on Medical Measurements and Applications, Chania, Greece.
60	05/2025	U Chaurasia, HK Pathak, KK Singh, **M Antonakakis**, M Zervakis. EEGCA-Net: Channel-Attention Framework with Subject-Wise Fine-Tuning for Motor Imagery Classification. 20th edition of the IEEE International Symposium on Medical Measurements and Applications, Chania, Greece.
60	10/2025	C Kapelonis, M Antonakakis, K Politof, A Antoniadis, M Zervakis. Automated Mosaic Tesserae Segmentation via Deep Learning Techniques. 2025 IEEE International Conference on Imaging Systems and Techniques (IST), 1-6
61	11/2025	C Chatzianagnostou, A Tsipourakis, K Biniakou, JP Crespo, CG Pena, KA Oungrinis, M Zervakis, **M Antonakakis**. Emotional State Alterations in Immersive Projection Environments: An EEG Study. 25th International Conference of the IEEE in Bioinformatics and Bioengineering, Athens, Greece.
62	11/2025	KT Himanshu Kumar Pathak, I Pathak, KK Singh, **M Antonakakis,** Michalis Zervakis. LungCLR: A Two-Stage Framework with Contrastive Pretraining for Low-Data Lung Cancer Histopathology. 25th International Conference of the IEEE in Bioinformatics and Bioengineering, Athens, Greece.

Invited Talks/Abstracts

Google scholar: https://scholar.google.ca/citations?user=27KeZXMAAAAJ&hl=en
ResearchGate: https://www.researchgate.net/profile/Marios-Antonakakis

No	Date	Author/ Abstract Information
1	02/2017	**M Antonakakis**. Multimodal analysis of combined EEG/MEG using priors from MRI. Centre for Interdisciplinary Brain Research (CIBR), Jyväskylä, Finland.
2	06/2018	**M Antonakakis**. "Brain Source Reconstruction of Epileptic Activity Using Combined EEG and MEG on a Calibrated Realistic Head Model." Scientific Symposium: "From the desk for epilepsy surgery: New source localization methods in clinical practice," Chairs: CH Wolters and S Rampp. Deutschen Gesellschaft für Epileptologie, Fürth, Germany.
3	08/2018	**M Antonakakis**. "Connectivity analysis in epilepsy networks using combined EEG/MEG source analysis and zoomed MRI." Scientific Workshop: "Connectivity analysis in epilepsy." Chair: C Vollmar. Summer School on Imaging in Epilepsy, Epilepsy Surgery and Epilepsy Research, Bochum, Germany.
4	08/2018	**M Antonakakis.** "Combined EEG/MEG source analysis for presurgical epilepsy diagnosis using calibrated realistic volume conductor model." Chairs: CH Wolters and S Rampp. Scientific Symposium: "Advanced MEG/EEG source analysis in epilepsy." 21st International Conference on Biomagnetism (Biomag2018), Philadelphia, Pennsylvania, USA
5	08/2019	**M Antonakakis.** "Combined EEG / MEG to individualize head modeling and its application to presurgical epilepsy diagnosis." Chairs: S Rampp and CH Wolters. Scientific Symposium on EEG and MEG source analysis methods. Summer School on Imaging in Epilepsy, Epilepsy Surgery and Epilepsy Research, Bochum, Germany.
6	09/2019	**M Antonakakis.** "Individual targeting effects and optimization of multi-channel transcranial electric stimulation of the human primary somatosensory cortex." Scientific Workshop: "New methods and experimental results for optimized multi-channel TES." Chairs: CH Wolters, and T Knösche. International Conference on Complex Medical Engineering, Dortmund, Germany. **1st Young Investigator Award**.
7	09/2020	**M Antonakakis.** "Individualized targeting and multi-channel transcranial stimulation in epileptology" Session: "E/MSI in Epileptology." Chairs: Stefan Rampp and Carsten Wolters. Summer School on Imaging in Epilepsy, Bochum, Germany.
8	09/2021	**M Antonakakis.** "Individualized targeting and multi-channel transcranial stimulation in epileptology" Session: "ESI in Epileptology." Chairs: Stefan Rampp and Carsten Wolters. Summer School on Imaging in Epilepsy, Bochum, Germany.
9	08/2022	**M Antonakakis.** "Combined EEG/MEG targeting and optimized transcranial electric stimulation in an inoperable epilepsy patient." Session: "Contribution of MEG, EEG and TES to the presurgical diagnosis and treatment of epilepsy." Chairs: Stefan Rampp and Carsten Wolters. 22st International Conference on Biomagnetism (Biomag2022), Birmingham, UK.
10	03/2022	**M Antonakakis.** "Machine Vision for Biomedical Imaging and Diagnostics Applications" **Keynote talk** on the 2nd International Conference on Machine Vision & Augmented Intelligence, March 4-6, 2022. (https://www.mvai.in/speakerDetails.php)
11	08/2022	**M Antonakakis**. "Biomedical image and signal processing for normal abnormal brain activity reconstruction and discrimination". **Keynote talk** – Workshop Artificial Intelligence for Addressing Problems in Precision Oncology.
12	11/2022	**M Antonakakis.** "Research and Innovation at TUC" 15th FoundIt-Bizrupt, Chania, Greece, https://www.eurecapro.eu/workshop-for-entrepreneurship-foundit/

13	07/2023	**M Antonakakis.** Spatiotemporal Analysis for Industrial Applications using image/signal processing and machine learning, Best Course 2023, https://best.tuc.gr/sc23/schedule/

Reviewer

Pubblons: https://publons.com/wos-op/researcher/3905170/marios-antonakakis/

No	Journal name
1	Biomedical Signal Processing & Control
2	Brain Connectivity
3	MDPI, Brain Sciences
4	Journal of Neuronal Engineering
5	Biological Psychology
6	Journal of Biomedical and Health Informatics
7	Society of IEEE Engineering in Medicine and Biology
8	Society of IEEE Bioinformatics and Biomedical Engineering
9	Frontiers in Neuroscience
10	Frontiers in Brain Imaging Methods
11	PLOS ONE
12	Computer Methods and Programs in Biomedicine
13	Quantitative Imaging in Medicine and Surgery (QIMS)
14	Internet of Things, Elsevier
15	MDPI, International Journal of Environmental Research and Public Health
16	European Journal of Neuroscience
17	IEEE/ACM Transactions on Computational Biology and Bioinformatics
18	MDPI Brain Sciences
19	Nature Scientific Reports
20	Journal of Neural Engineering
21	NeuroImage
22	NeuroImage Clinical
23	Human Brain Mapping

Thesis supervision (integrated M.Sc.)/master thesis

TUC-Library: https://dias.library.tuc.gr/

School of Electrical and Computer Engineering – Technical University of Crete

No	Period	Student name / Thesis title
1	2014 – 2015	Vasilios Pezoulas: 'Dynamin Connectivity Analysis of MEG.'
2	2014 – 2016	Marietta Patsioura: 'Analysis of Evoked Fields from Visual and Auditory Stimuli.'
3	2015 – 2017	Elena Petrou: 'Dominant Networks of Phase Synchronization.'
4	2016 – 2021	Nicolas Zoidis: 'Resting State Analysis MEG via Complexity.'
5	2017 – 2018	Vasilios Dimakopoulos: 'Characterization of epileptic activity based on integrated functional network on a realistic head model.'
6	2017 – 2018	Konstantinos Politof: 'Functional Connectivity in the Wrist Somatosensory Network: An EEG/MEG Study.'
7	2019 – 2021	Glykeria Sdoukopoulou: Comparison of low and high frequency oscillations of combined EEG/MEG source analysis: A drug-resistant epilepsy case study
8	2020 – 2022	Christos Trimas: 'Comparison of difference machine and deep learning schemes for the detection of objects from UAV-based images.'
9	2020 – 2022	Veniamin Malefioudakis: 'Terrain reconstruction using Photogrammetry.'
10	2020 – 2021	Glykeria Sdoukopoulou (Master of Science): Automatic Spike detection using Combined EEG/MEG source

		analysis with machine learning and deep learning approaches
11	2020 – 2022	Stavroula Tsakaneli (Master of Science): Graph theory metrics on the combination of genomics and electrophysiology for the accurate detection of multiple sclerosis
12	2021 – 2022	Thanos Delatolas: Combined Electromagnetic Source Imaging using Deep Learning and Finite Element Analysis
13	2022 – 2023	Manos Zahariadis: Wildforest fire detection using deep learning and fusion techniques on aerial image datasets
14	2023 – 2024	Konstantinos Dimopoulos: Photovoltaic panel inspection using unmanned aerial vehicles
15	2022 – 2024	Afroditi Kolomvaki: EEG source localization on different realistic brain anatomies using Deep Learning Techniques
16	2023 – 2024	Alexandra Tsipouraki: Analysis of electroencephalography in epilepsy after transcranial brain stimulation using connectivity models and machine learning methods
17	2023 – 2024	Maria Douridou: Analysis of magnetoencephalographic signals from children with reading difficulties using realistic head modeling and machine learning
18	2023 – 2024	Evangelos Katsoupis: Development of a cardiovascular disease monitoring system.
19	2023 - 2024	Sotiris Kavvouras: Analysis of MEG signals from patients with mTBI using multilayer functional connectivity, ML and Graph NNs
20	2021 – 2024	Apostolis Karasanoglou (Master of Science): Landcover segmentation from high-resolution and hyperspectral images
21	2019 – 2025	Konstantinos Politof (Master of Science): 'Functional connectivity of somatosensory network using realistic head modeling: An EEG/MEG study.'
23	2022 – 2024	Vasilis Giovanoglou: Object detection, localization and feature characterization of image data from UAV.
24	2022 – 2024	Stelina Naka: Cardiovascular segmentations tools using Vision Transformers
25	2023 – 2024	Klea Biniakou: Conduction and analysis of EEG brain responses from visual stimulus
26	2023 – 2024	Maria Koutalaki: Multi-frequency Network attacks on MEG recordings from patients with mTBI
27	2023 – 2025	Christina Chatzianaglostou: Conduction and analysis of EEG/ECG brain responses from audiovisual stimulus
28	2024 – 2025	Charilaos Kapelonis: Mosaic segmentation using SAM2
29	2022 – present	Maria Vlachakou: Landcover classification on very-high resolution images
30	2023 – present	Vasilis Gkentsoudis: Estimation of multi-level and multi-frequency functional connectivity networks of MEG recordings from patients with mTBI
31	2023 – present	Maria Kontogianni: Analysis of EEG brain responses from visual stimulus using deep learning
32	2023 – present	Konstantinos Peslis: Multibody deep learning segmentation
33	2025 – present	Stelina Naka: Time series forecasting in raw earth material monitoring
34	2024 – present	Georgia Bantouva: Graph Neural Networks with Effective Connectivity on Epilepsy detection
35	2024 – present	Kleinta Giaoupi: Development of an EEG/ECG app for recording and anomaly detection

36	2025 – present	Ioannis Fasarakis: Heart rate detection using deep learning and imaging data
37	2025 – present	Fotis Markou: Mosaic color extraction and segmentation using SAM2
38	2024 – present	Meriem Abadi (PhD Thesis: Thyroid detection and characterization using deep learning and foundation modeling
39	2025 – present	Michalis Papalios: Rich club estimation on time-varying MEG graphs for reading difficulties detection
40	2025 – present	Eleni Stavropoulou: mTBI detection using KANetworks on MEG graphs
41	2024 – present	Maria Florou: Head tisssues segmentation using deep learning
42	2025 – present	Ioannis Tzevelekis: Conduction and analysis of EEG data for Nostalgia detection
43	2024 – present	George Doukas: Epilepsy detection using vision transformers
44	2024 – present	Konstantinos Athanasoulis: Heart Aorta segmentation using MedSAM2
45	2024 – present	Eva Pantazi: Heart rate detection using pattern recognition techniques
46	2024 – present	Maria Strataki: EEG / ECG data analysis for emotion characterization
47	2024 – present	Dimitra Serefidou: Deep learning foundation modeling for brain tumor segmentation
48	2025 – present	Panagiotis Raptis: CTA (Computed Tomography Angiography) data from the same patient taken at different time points
49	2024 – present	Sofoklis Fileratos: Timeseries forecasting from multiple sources using deep learning procedures
50	2025 – present	Ioannis Koukoulomatis: Video EEG analysis with machine learning for the charactization of emotional states

Languages

Ελληνικά (Native tongue)

11/2015 Αγγλικά (C2 lever)

Technical Skills

Programming languages	C, Java, C++, R, Python, Javascript, jQuery, PHP, MySQL, HTML
Other tools	MATLAB, SPSS, MS Office, Dia, Scirun, ParaView, Docker
OS	MS Windows, Linux (distributions: Mint, Ubuntu), MacOS