Ιωάννης Κάκκος

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EDUCATION

Doctor of Philosophy, 2021	**National Technical University of Athens: Dept. of Electrical and Computer Engineering** PhD Thesis: *"Processing and analysis of EEG data recordings with the application of machine learning methods"*
Master's degree: Biomedical Engineering**,** 2015	**Interuniversity Postgraduate Programme of University of Patras: School of Medicine & National Technical University of Athens: Dept. of Electrical and Computer Engineering & Dept. of Mechanical Engineering** MSc Thesis: "*Classification of Event-Related Potentials related to error cognition of Actors and Observers in an auditory task*"
Bachelor's degree: Physics, 2013	**University of Patras: Department of Physics** BSc Thesis: "*Digitization of Physics Demonstration Experiments''*

RESEARCH EMPLOYMENT HISTORY

Jan. 2021 – now	National Technical University of Athens: Dept. of Electrical and Computer Engineering, Athens [Research Fellow]
Mar 2016 – Dec 2016	National University of Singapore, Singapore [Research Associate in "Singapore Institute for Neurotechnology (SINAPSE)"]

TEACHING EXPERIENCE

Academic Year: 2021-2022	University of Werst Attica, Department of Electrical and Electronics Engineering, Faculty of Engineering MSc: Artificial Intelligence and Deep Learning *Artificial Intelligence in Healthcare and Biometrics, 2nd Semester*
Academic Year: 2021-2022	University of Werst Attica, Department of Biomedical Engineering, Faculty of Engineering MSc: Advanced Systems and Methods in Biomedical Engineering *Information Technologies in Medicine and other Biosciences*,1st Semester
Academic Years: 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022	National Technical University of Athens: Dept. of Electrical and Computer Engineering, Athens *Biomedical Signal Analysis and Processing*, 7th Semester
Academic Years: 2020-2021, 2021-2022	Technical University of Crete, Foundation for Research and Technology MSc: Biomedical Engineering *Measurement and Analysis of Bio-signals*, 1st Trimester

SCIENTIFIC ACHIEVEMENTS

Overall Publication Record:
24 overall publications: 11 in Indexed Journals, 13 in Books-Conference Proceedings, posters. Citations: 265, h-index: 7 (https://scholar.google.gr/citations?user=9Z7tMNYAAAAJ&hl=en)

Research Grants:
BIOBON3D: MIS-5129423
DESTINY: MIS-5031684
European Social Fund- ESF, State Scholarships Foundation MIS-5000432

PUBLICATIONS

Peer-reviewed Journals

1. V. Iliadou, I. Kakkos, P. Karaiskos, V. Kouloulias, K. Platoni, A. Zygogianni, G.K. Matsopoulos. Early Prediction of Planning Adaptation Requirement Indication Due to Volumetric Alterations in Head and Neck Cancer Radiotherapy: A Machine Learning Approach. Cancers 2022, 14, 3573. https://doi.org/10.3390/cancers14153573
2. Y. Sun, Z. Zhang, I. Kakkos, G.K. Matsopoulos, J. Yuan, J. Suckling, L. Xu, S. Cao, W. Chen, X. Hu, T. Li, K. Sim, P. Qi, Y. Sun, Inferring the Individual Psychopathologic Deficits with Structural Connectivity in a Longitudinal Cohort of Schizophrenia, IEEE J Biomed Health Inform. PP (2022). https://doi.org/10.1109/JBHI.2021.3139701.
3. J. Liu, K. Dong, Y. Sun, I. Kakkos, F. Huang, G. Wang, P. Qi, X. Chen, D. Zhang, A. Bezerianos, Y. Sun, Progress of Brain Network Studies on Anesthesia and Consciousness: Framework and Clinical Applications, Engineering. (2021). https://doi.org/10.1016/j.eng.2021.11.013.
4. I. Kakkos, G.N. Dimitrakopoulos, Y. Sun, J. Yuan, G.K. Matsopoulos, A. Bezerianos, Y. Sun, EEG fingerprints of task-independent mental workload discrimination, IEEE Journal of Biomedical and Health Informatics. (2021) 1–1. https://doi.org/10.1109/JBHI.2021.3085131.
5. I. Zorzos, I. Kakkos, E.M. Ventouras, G.K. Matsopoulos, Advances in Electrical Source Imaging: A Review of the Current Approaches, Applications and Challenges, Signals. 2 (2021) 378–391. https://doi.org/10.3390/signals2030024.
6. A.S. Karampasi, A.D. Savva, V.C. Korfiatis, I. Kakkos, G.K. Matsopoulos, Informative Biomarkers for Autism Spectrum Disorder Diagnosis in Functional Magnetic Resonance Imaging Data on the Default Mode Network, Applied Sciences. 11 (2021) 6216. https://doi.org/10.3390/app11136216.
7. I. Kakkos, E.M. Ventouras, P.A. Asvestas, I.S. Karanasiou, G.K. Matsopoulos, A condition-independent framework for the classification of error-related brain activity, Med Biol Eng Comput. (2020). https://doi.org/10.1007/s11517-019-02116-5.
8. I. Kakkos, G.N. Dimitrakopoulos, L. Gao, Y. Zhang, P. Qi, G.K. Matsopoulos, N. Thakor, A. Bezerianos, Y. Sun, Mental Workload Drives Different Reorganizations of Functional Cortical Connectivity Between 2D and 3D Simulated Flight Experiments, IEEE Trans Neural Syst Rehabil Eng. 27 (2019) 1704–1713. https://doi.org/10.1109/TNSRE.2019.2930082.
9. G.N. Dimitrakopoulos, I. Kakkos, Z. Dai, H. Wang, K. Sgarbas, N. Thakor, A. Bezerianos, Y. Sun, Functional Connectivity Analysis of Mental Fatigue Reveals Different Network Topological Alterations Between Driving and Vigilance Tasks, IEEE Transactions on Neural Systems and Rehabilitation Engineering. 26 (2018) 740–749. https://doi.org/10.1109/TNSRE.2018.2791936.
10. D.B.L. Teh, S.M. Chua, A. Prasad, I. Kakkos, W. Jiang, M. Yue, X. Liu, A.H. All, Neuroprotective assessment of prolonged local hypothermia post contusive spinal cord injury in rodent model, Spine J. 18 (2018) 507–514. https://doi.org/10.1016/j.spinee.2017.10.066.
11. G.N. Dimitrakopoulos, I. Kakkos, Z. Dai, J. Lim, J.J. deSouza, A. Bezerianos, Y. Sun, Task-Independent Mental Workload Classification Based Upon Common Multiband EEG Cortical Connectivity, IEEE Trans Neural Syst Rehabil Eng. 25 (2017) 1940–1949. https://doi.org/10.1109/TNSRE.2017.2701002.

Conference Proceedings and Posters

1. S.T. Miloulis, I. Kakkos, A. Karampasi, I. Zorzos, E.-C. Ventouras, G.K. Matsopoulos, P. Asvestas, I. Kalatzis, Stimulus Effects on Subject-Specific BCI Classification Training using Motor Imagery, in: 2021 International Conference on E-Health and Bioengineering (EHB), 2021: pp. 1–4. https://doi.org/10.1109/EHB52898.2021.9657538.
2. S.T. Miloulis, I. Kakkos, G.N. Dimitrakopoulos, Y. Sun, I. Karanasiou, P. Asvestas, E.-C. Ventouras, G. Matsopoulos, Evaluating Memory and Cognition via a Wearable EEG System: A Preliminary Study, in: J. Ye, M.J. O'Grady, G. Civitarese, K. Yordanova (Eds.), Wireless Mobile Communication and Healthcare, Springer International Publishing, Cham, 2021: pp. 52–66. https://doi.org/10.1007/978-3-030-70569-5_4.
3. A. Karampasi, I. Kakkos, S.-T. Miloulis, I. Zorzos, G.N. Dimitrakopoulos, K. Gkiatis, P. Asvestas, G. Matsopoulos, A Machine Learning fMRI Approach in the Diagnosis of Autism, in: 2020 IEEE International Conference on Big Data (Big Data), 2020: pp. 3628–3631. https://doi.org/10.1109/BigData50022.2020.9378453.
4. I. Kakkos, K. Gkiatis, K. Bromis, P.A. Asvestas, I.S. Karanasiou, E.M. Ventouras, G.K. Matsopoulos, Classification of Error Related Brain Activity in an Auditory Identification Task with Conditions of Varying Complexity, J. Phys.: Conf. Ser. 931 (2017) 012017. https://doi.org/10.1088/1742-6596/931/1/012017.
5. J. Chai, G. Chen, P. Thangavel, G.N. Dimitrakopoulos, I. Kakkos, Y. Sun, Z. Dai, H. Yu, N. Thakor, A. Bezerianos, J. Li, Identification of gait-related brain activity using electroencephalographic signals, in: 2017 8th International IEEE/EMBS Conference on Neural Engineering (NER), 2017: pp. 548–551. https://doi.org/10.1109/NER.2017.8008410.
6. G.N. Dimitrakopoulos, I. Kakkos, N.V. Thakor, A. Bezerianos, null Yu Sun, A mental fatigue index based on regression using mulitband EEG features with application in simulated driving, Conf Proc IEEE Eng Med Biol Soc. 2017 (2017) 3220–3223. https://doi.org/10.1109/EMBC.2017.8037542.
7. K. Bromis, I. Kakkos, K. Gkiatis, I.S. Karanasiou, G.K. Matsopoulos, Brain Functional Connectivity in Small Cell Lung Cancer Population after Chemotherapy Treatment: an ICA fMRI Study, J. Phys.: Conf. Ser. 931 (2017) 012041. https://doi.org/10.1088/1742-6596/931/1/012041.
8. G.N. Dimitrakopoulos, I. Kakkos, A.G. Vrahatis, K. Sgarbas, J. Li, Y. Sun, A. Bezerianos, Driving Mental Fatigue Classification Based on Brain Functional Connectivity, in: G. Boracchi, L. Iliadis, C. Jayne, A. Likas (Eds.), Engineering Applications of Neural Networks, Springer International Publishing, Cham, 2017: pp. 465–474. https://doi.org/10.1007/978-3-319-65172-9_39.
9. K. Gkiatis, K. Bromis, I. Kakkos, I.S. Karanasiou, G.K. Matsopoulos, K. Garganis, Effects of Inaccurate Identification of Interictal Epileptiform Discharges in Concurrent EEG-fMRI, J. Phys.: Conf. Ser. 931 (2017) 012042. https://doi.org/10.1088/1742-6596/931/1/012042.
10. K. Gkiatis, A. Karampasi, I. Kakkos, S.T. Miloulis, G.K. Matsopoulos, Ch. Benjamin, and K. Garganis, "Presurgical mapping of language network with fMRI: Greek evaluation", Poster in 13th Panhellenic Epilepsy Conference, 7-9 June 2019, Athens, 2nd Prize Award for best poster presented.

Book Chapters

1. Miloulis S.T., Kakkos I., Anastasiou A., Matsopoulos G.K., Koutsouris D. (2022) Application of Artificial Intelligence towards Successful Ageing - A Holistic Approach. In: Koumpouros I., Georgoulas A., Kremmyda G. (eds) Modern Challenges and Approaches to Humanitarian Engineering, ISBN13: 9781799891901, doi:10.4018/978-1-7998-9190-1
2. A. Karampasi, K. Gkiatis, I. Kakkos, K. Garganis, G.K. Matsopoulos, Advances in Artificial Intelligence for the Identification of Epileptiform Discharges, in: C.-P. Lim, A. Vaidya, K. Jain, V.U. Mahorkar, L.C. Jain (Eds.), Handbook of Artificial Intelligence in Healthcare: Vol. 1 - Advances and Applications, Springer International Publishing, Cham, 2022: pp. 3–25. https://doi.org/10.1007/978-3-030-79161-2_1.
3. I. Kakkos, S.-T. Miloulis, K. Gkiatis, G.N. Dimitrakopoulos, G.K. Matsopoulos, Human–Machine Interfaces for Motor Rehabilitation, in: I. Maglogiannis, S. Brahnam, L.C. Jain (Eds.), Advanced Computational Intelligence in Healthcare-7: Biomedical Informatics, Springer, Berlin, Heidelberg, 2020: pp. 1–16. https://doi.org/10.1007/978-3-662-61114-2_1.