CV

Personal Information

Legal Name (Publishing Name): Kavroulakis Eleftherios
Date of Birth: 21/09/1985
Place of Birth: Chania, Greece
Nationality/Citizenship: Greek
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Current Position

01/02/2024-Present	**Research Assistant : smartHEALTH EU programme – Analysis of MRI images for automatic identification and classification of Central Nervous System Diseases using AI algorithms.** Foundation of Research and Technology (FORTH), Computational Biomedicine Laboratory (CBML)

Previous Research Positions

01.03.2021-15.05.2023	**Principal Investigator: Neuroimaging Correlates of Cognitive and Psychoemotional Manifestations of Systemic Lupus Erythematosus;** Department of Radiology, Medical School, University of Crete, Greece
01.12.2019-30.04.2022	**Post-doctoral Researcher: The neural correlates of action and visual perception and multisensory integration in healthy subjects and schizophrenia patients;** P.I.: B. Straube, T. Kircher, Department of Psychiatry, Translational Neuroimaging Unit, University of Marburg, Germany
01.03.2018 - 01.02.2022	**Post-doctoral Researcher: Cognitive, psychoemotional and neuroimaging predictors of disease progression in the early stages of Multiple Sclerosis.; P.I.: E. Kavroulakis, Advisor: E.Papadaki,** Department of Radiology, Medical School, University of Crete, Greece
01.12.2012 - 01.03.2018	**PhD Candidate: Myelin content changes in probable Alzheimer's disease and Mild Cognitive Impairment; Advisors: E. Papadaki & P. Simos,** Department of Radiology, Medical School, University of Crete, Greece
01.06.2012 – 30.11.2012	**Laboratory Rotation: Diagnosis and Prognosis of neurodegenerative diseases with advanced neuroimaging techniques** Department of Radiology, Medical School, University of Crete, Greece

01.01.2012 - 31.05.2012	**Laboratory Rotation: Study of the molecular mechanisms involved in the regenerative capacity of the CNS; Advisor: I. Charalampopoulos,** Department of Pharmacology, University of Crete, Greece

Education

12.12.2012 - 20.06.2018	Department of Radiology, Medical School, University of Crete, Greece, "Myelin content changes in probable Alzheimer's disease and Mild Cognitive Impairment", PhD in Neurosciences (10/10)
08.10.2010 - 11.12.2012	Medical School, University of Crete, Heraklion, Greece, MSc "Brain and Mind" Interdisciplinary Program in Cognitive Neuroscience (8.5/10)
30.09.2003 - 01.12.2009	Department of Biology, University of Crete, BSc in Molecular Biology and Biotechnology (6.5/10)

Publications

1. **E. Kavroulakis**, PG. Simos, G. Kalaitzakis, TG. Maris, D. Karageorgou, I. Zaganas, S. Panagiotakis, M. Basta, A. Vgontzas, E. Papadaki**.** Myelin content changes in probable Alzheimer's disease and mild cognitive impairment: Associations with age and severity of neuropsychiatric impairment, J Magn Reson Imaging, 2017 Aug 31, doi: 10.1002/jmri.25849

2. **E. Kavroulakis**, N.J. Simos, T.G. Maris, I. Zaganas, S. Panagiotakis, E.Papadaki. Evidence of Age-I Hemodynamic and Functional Connectivity Impairment: A Resting State fMRI Study. Front Neurc March, doi.org/ 10.3389/fneur.2021.633500

3. **E. Kavroulakis**, B.M. van Kemenade, B.E. Arikan, T. Kirchher, B. Straube. The effect of self- vs. ext generated actions on timing, duration and amplitude of BOLD response for visual feedback proc HBM 2022 September, doi.org/10.1002/hbm.26053

4. HE. Savaki*, **E. Kavroulakis*,** E. Papadaki, TG. Maris, PG. Simos. Action Observation Respons Influenced by Movement Kinematics and Target Identity, Cereb Cortex, 2021 Jul 14 10.1093/cercor/bhab225. ***contributed equally**

5. E. Papadaki*, **E. Kavroulakis*,** G. Kalaitzakis, D. Karageorgou, D. Makrakis, T. Maris, P.G. Simos related deep white matter changes in myelin and water content: a T2 relaxometry study. J Magn Imaging 2019, doi: 10.1002/jmri.26707. ***contributed equally**

6. **E. Kavroulakis**, P. Simos, S. Papadopoulou, S. Dimitriou, D. Karageorgou, A. Vakis, E. Papadaki. Cerebral Perfusion disturbances in traumatic brain injury: A preliminary study about direct and indirect effects on memory and psychoemotional outcome. Hellenic Journal of Radiology 2016 October, vol 1: 11-26

7. P. Simos**, E. Kavroulakis**, T. Maris, E. Papadaki, T. Boursianis, G. Kalaitzakis, E. Savaki. Neural foundations of goal directed overt and covert actions. NeuroImage 2017 May 15;152:482-496

8. Papadaki E, **Kavroulakis E**, Bertsias G, Fanouriakis A, Karageorgou D, Sidiropoulos P, Papastefanakis E, Boumpas DT, Simos P. Regional cerebral perfusion correlates with anxiety in neuropsychiatric SLE: evidence for a mechanism distinct from depression. Lupus. 2019 Dec;28(14):1678-1689. doi: 10.1177/0961203319887793.

9. E. Papadaki, **E. Kavroulakis**, K. Manolitsi, D. Makrakis, E. Papastefanakis, P. Tsagaraki, S. Papadopoulou, A. Zampetakis, M. Malliou, A. Vakis, P. Simos. Cerebral perfusion disturbances in chronic mild traumatic brain injury correlate with psychoemotional outcomes. Brain Imaging Behav. 2020 Jul 30. doi: 10.1007/s11682-020-00343-1.

10. T. Panou, **E. Kavroulakis,** V. Mastoredemos, S. Pouli, G. Kalaitzakis, E. Spyridaki, T.G. Maris, P. Simos, E. Papadaki. Myelin content changes in Clinically Isolated Syndrome and Relapsing-Remitting Multiple Sclerosis: Associations with lesion type and severity of visuomotor impairment. Mult Scler Relat Disord. 2021 Jun 23; 54:103108. doi: 10.1016/j.msard.2021.103108.

11. E. Papadaki, A. Fanouriakis *, **E**. **Kavroulakis** ***,** D. Karageorgou, P. Sidiropoulos, G. Bertsias, P. Simos, DT. Boumpas. Neuropsychiatric lupus or not? Cerebral hypoperfusion by perfusion-weighted MRI in normal appearing white matter in primary neuropsychiatric lupus erythematosus. Annals of the Rheumatic Diseases, 2017 December 19, doi: 10.1136/annrheumdis-2017-212285. ***contributed equally**

12. G. Kalaitzakis, **E. Kavroulakis,** T. Boursianis, S. Veneti, L. Kontopodis, K. Marias, E. Papadaki, A. Karantanas, T. Maris. Magnetic relaxation measurements on tissue mimicking phantoms: comparisons between different fitting algorithms in MRI T2 calculations. Physica Medica. 2014 Jan 1; E118- E119, doi: 10.1016/ j.ejmp.2014.07.337

13. E Kosteletou, PG Simos, **E Kavroulakis**, D Antypa, TG Maris, AP Liavas, PA Karakasis, E Papadaki. Improving the Sensitivity of Task-Related Functional Magnetic Resonance Imaging Data Using Generalized Canonical Correlation Analysis. Front. Hum. Neurosci., 14 December 2021 https://doi.org/10.3389/fnhum.2021.771668

14. NJ Simos, SI Dimitriadis, **E Kavroulakis**, GC Manikis, G Bertsias, P Simos, TG Maris, E Papadaki. Quantitative Identification of Functional Connectivity Disturbances in Neuropsychiatric Lupus Based on Resting-State fMRI: A Robust Machine Learning Approach. Brain Sci. 2020 Oct 25;10(11):777. doi: 10.3390/brainsci10110777

15. D. Antypa, N.J. Simos, **E. Kavroulakis**, G. Bertsias, A. Fanouriakis, P. Sidiropoulos, D.T. Boumpas, E. Papadakis. Anxiety and depression severity in neuropsychiatric SLE are associated with perfusion and functional connectivity changes of the frontolimbic neural circuit: A resting-state functional MRI study. Lupus Science and Medicine 2021 Apr;8(1):e000473. doi: 10.1136/lupus-2020-000473.

16. E. Papadaki, NJ. Simos, **E. Kavroulakis**, G. Bertsias, D. Antypa, A. Fanouriakis, T. Maris, P. Sidiropoulos, DT. Boumpas. Converging evidence of impaired brain function in systemic lupus erythematosus: changes in perfusion dynamics and intrinsic fuctional connectivity. Neuroradiology. 2022 Mar 6. doi: 10.1007/s00234-022-02924-x. Online ahead of print. PMID: 35249129

17. E. Papadaki, A. Fanouriakis, **E. Kavroulakis**, D. Karageorgou, P. Sidiropoulos, G. Bertsias, P. Simos, DT. Boumpas. "Response to eLetter Wallace". Annals of the Rheumatic Diseases. Ann Rheum Dis. 2018 Jan 23. pii: annrheumdis-2018-212949. doi: 10.1136/annrheumdis-2018-212949.

18. A. Pentari, G. Tzagkarakis, P. Tsakalides, P. Simos, G. Bertsias, **E. Kavroulakis**, K. Marias, N. J. Simos, and E. Papadaki, "Changes in resting-state functional connectivity in neuropsychiatric Lupus: A dynamic approach based on recurrence quantification analysis," Elsevier Biomedical Signal Processing and Control, vol. 72, part A, 2022, pages 103285, ISSN 1746-8094, https://doi.org/10.1016/j.bspc.2021.103285.

19. E. Papadaki, V. Mastoredemos, T. Panou, S. Pouli, E. Spyridaki**, E. Kavroulakis**, G. Kalaitzakis, T.G. Maris, P. Simos. T2 Relaxometry Evidence of Microstructural Changes in Diffusely

Abnormal White Matter in Relapsing-Remitting Multiple Sclerosis and Clinically Isolated Syndrome: Impact on Visuomotor Performance. J Magn Reson Imaging 2021 May 6. doi: 10.1002/jmri.27661.

20. Simos NJ, Manolitsi K, Luppi AI, Kagialis A, Antonakakis M, Zervakis M, Antypa D, **Kavroulakis E**, Maris TG, Vakis A, Stamatakis EA, Papadaki E. Chronic Mild Traumatic Brain Injury: Aberrant Static and Dynamic Connectomic Features Identified Through Machine Learning Model Fusion. Neuroinformatics. 2022 Dec 2. doi: 10.1007/s12021-022-09615-1. Epub ahead of print. PMID: 36456762.

21. Antypa D, Simos NJ, Panou T, Spyridaki E, Kagialis A, Kosteletou E, **Kavroulakis E**, Mastorodemos V, Papadaki E. Distinct hemodynamic and functional connectivity features of fatigue in clinically isolated syndrome and multiple sclerosis: accounting for the confounding efect of concurrent depression symptoms. Neuroradiology 2023 June. doi.org/10.1007/s00234-023-03174-1

22. Pentari A, Simos N, Tzagarakis G, Kagialis A, Bertsias G, **Kavroulakis E**, Gratsia E, Sidiropoulos P, Boumpas DT, Papadaki E. Altered hippocampal connectivity dynamics predicts memory performance in neuropsychiatric lupus: a resting-state fMRI study using cross-recurrence quantification analysisLupus Science & Medicine 2023;10:e000920. doi: 10.1136/lupus-2023-000920

23. G. Kalaitzakis, E. Papadaki, **E. Kavroulakis**, T. Boursianis, K. Marias, TG. Maris. Optimising T2 relaxation measurements on MS patients utilising a multi-component tissue mimicking phantom and different fitting algorithms in T2 calculations. Hellenic Journal of Radiology 2019 June.

Scientific Conference Oral & Poster Presentations (selection)

Oral presentations

E. Kavroulakis, G. Kalaitzakis, V. Mastorodimos, P. Simos, T. Maris & E. Papadaki .Multi-echo T2 relaxation technique in Multiple Sclerosis. Hellenic Meeting of Radiology 2015, Athens, Greece.

E. Kavroulakis, P. Simos, E. Papadaki, T. Boursianis, G. Kalaitzakis, T. Maris & E. Savaki .Brain Circuits engaged in Mental Simulation of Action: An fMRI study. Hellenic Meeting of Radiology 2015, Athens, Greece.

E. Kavroulakis, S.Dimitriou, V. Mastorodimos, T. Maris, P. Simos & E. Papadaki. Resting State fMRI in Multiple Sclerosis & Clinically Isolated Syndrome (CIS). Hellenic Meeting of Radiology 2015, Athens, Greece.

E. Kavroulakis, P.Simos, G.Kalaitzakis, T. Maris, I. Zaganas, S. Panagiotakis, A. Vgontzas, E. Papadaki . Multi-Echo T2 Relaxation Technique in Dementia, BCR 2016, Thessaloniki, Greece.

E.Kavroulakis, P. Simos, V.Mastorodimos, I. Zaganas, T. Maris, E.Papadaki. Application of Resting State fMRI in MS, Lupus and Dementia. Hellenic Meeting of Radiology 2017, Alexandroupoli. Greece.

Poster presentations

E. Kavroulakis, G. Kalaitzakis, V. Mastorodimos, P. Simos, T. Maris & E. Papadaki. Multi-echo T2 relaxation technique in Multiple Sclerosis. FENS 2015, Thessaloniki, Greece.

E. Kavroulakis, P. Simos, E. Papadaki, T. Boursianis, G. Kalaitzakis, T. Maris, E. Savaki . Brain Circuits engaged in Mental Simulation of Action: An fMRI study. FENS 2015, Thessaloniki, Greece.

G. Kalaitzakis, **E. Kavroulakis**, T. Boursianis & T. Maris. Magnetic relaxation measurements on tissue mimicking phantoms: comparison between different fitting algorithms in MRI T2 calculations. European Congress of Medical Physics, 2014, Athens, Greece.

S. Dimitriou, **E. Kavroulakis**, V. Mastorodimos, T. Maris & E. Papadaki. Hemodynamic (T2* Perfusion) and Structural (DWI/Tractography) changes in patients with Multiple Sclerosis and Clinically Isolated Syndrome. Hellenic Meeting of Radiology 2013, Crete, Greece

E. Papadaki, **E. Kavroulakis**, G. Kalaitzakis, T. Boursianis, T. Maris**,** E. Savaki, P. Simos. Neural Foundations Of Goal Directed Overt And Covert Actions. ESNR 2016 Annual Meeting, Belgrade, Serbia.

E. Kavroulakis, P. Simos, E. Papadaki, G. Kalaitzakis, T. Boursianis, T. Maris, E. Savaki. Brain Networks for Overt and Covert Actions: AN fMRI study. 16th Austrian fMRI/2nd Alpine Chapter Symposium.

D. Tsolakopoulos, A. Despoti, D. Kasselimis , **E. Kavroulakis** , G. Angelopoulou , E. Korompoki, A. Tountopoulou, S. Vassilopoulou, G Papageorgiou, I Evdokimidis, C. Potagas. Verbal and visuospatial working memory deficits in left and right hemisphere stroke. 27th European Stroke Conference, Athens, Greece.

G. Papageorgiou, D. Kasselimis, **E. Kavroulakis**, G. Angelopoulou, D. Tsolakopoulos, A. Tountopoulou, E. Korompoki , S. Vasilopoulou , I. Evdokimidis, C. Potagas. Investigating the neural substrate of aphasic errors during naming. 27th European Stroke Conference, Athens, Greece.

Memberships

European Brain Behaviour Society (EBBS)
Federation of European Neuroscience Societies (FENS)

Fellowships

2021 - 2023	Hellenic Foundation for Research and Innovation, Fellowship for Principal Investigator Department of Radiology, Medical School, University of Crete, Greece
2019 - 2022	TRR/SFB 135 project, DFG, Fellowship for Post-Doctoral Research, Department of Psychiatry, University of Marburg, Germany.
2019-2020	Hellenic Foundation for Research and Innovation, Fellowship for Post-Doctoral Research, Department of Radiology, Medical School, University of Crete, Greece
2018-2019	Horizon 2020-Personalized Medicine, Fellowship for Post-Doctoral Research: Predicting effective adaptation to breast cancer to help women BOUNCE back (project ID 777167), Department of Radiology, Medical School, University of Crete, Greece
2013 - 2015	Graduate Research Assistant: Mental Simulation of Action-MESI. Aristeia II Program, Operational Programme for Education and Lifelong Learning 2007-2013 of the NSRF

Teaching, Supervising, & Mentoring Activities

2014 – 2019	Co-supervision of Bachelor, Master and PhD students University of Crete: S. Dimitriou, S. Papadakos, M. Leonidou, G. Kipros, D. Karageorgou, D. Makrakis. E. Kosteletou
2019-2022	Co-supervision of master and PhD students University of Marburg, Germany: E. Oddy, C. Schmitter,
2015-2018	Introduction to Neuroimaging Course, MSc "Brain and Mind" Interdisciplinary Program in Cognitive Neuroscience, Department of Medicine, University of Crete
2023	Introduction to Neuroimaging Course, MSc "Brain and Mind" Interdisciplinary Program in Cognitive Neuroscience, Department of Medicine, University of Crete
2023	Systemic Neuroscience course, MSc "Graduate Program in Neuroscience", Department of Medicine, University of Crete
2024	Biopsychology course, BSc "Graduate Program in Psychology", Metropolitan College, Heraklion, Crete, Greece

Workshops (selection)

2022	Human Brain Mapping Educational Courses. Marburg, Germany.
2021	Statistical Parametric Mapping (SPM) course. London, UK.