

Orestis Stylianou

MD PhD



[Website](#)

[Google Scholar](#)

[LinkedIn](#)

[X\(Twitter\)](#)

[E-mail](#)

Work Experience

Medical Resident / Researcher, University Clinic Ruppin-Brandenburg, Germany

April 2025 –

Department of Psychiatry

Postdoctoral Research Associate, Medical School of Brandenburg, Germany

February 2024 – December 2024

Department of Surgery, Immanuel Clinic Rüdersdorf

Medical Resident, Median Clinic Grünheide (Mark), Germany

July 2024 – December 2024

Department of Neurology

Medical Resident, Median Clinic Berlin, Germany

January 2024 – April 2024

Department of Neurology

Postdoctoral Research Associate, Charité University Hospital, Germany

February 2022 – September 2023

Brain Simulation Section, Department of Neurology

Undergraduate Researcher, Semmelweis University, Hungary

2015 – 2019

Network Physiology Lab, Department of Physiology

Education

Statistics and Data Science, Massachusetts Institute of Technology, USA

2020 –

[MicroMasters Program](#)

Doctorate, Semmelweis University, Hungary

2019 – 2022

Doctorate School of Theoretical and Translational Medicine

Medicine, Semmelweis University, Hungary

2013 – 2019

Undergraduate Researcher, Semmelweis University, Hungary

2015 – 2019

Network Physiology Lab, Department of Physiology

Pre-medical, McDaniel College, Hungary

2012 – 2013

Publications

Racz, F. S., Kaposzta, Z., Czoch, A., Chang, J. T., **Stylianou, O.**, Mukli, P., Bengé, J. F., & Eke, A. (2026). Global scale-free brain activity as a potential neural signature of visual information processing in aging. *Frontiers in Aging Neuroscience*, 18. <https://doi.org/10.3389/fnagi.2026.1770204>

Stylianou, O., Meixner, J. M., Schlick, T., & Krüger, C. M. (2025). Whole-body networks: A holistic approach for studying aging. *GeroScience*. <https://doi.org/10.1007/s11357-025-01540-w>

Stylianou, O.; Susi, G.; Hoffmann, M.; Suárez-Méndez, I.; López-Sanz, D.; Schirner, M.; Ritter, P. Multiscale Detrended Cross-Correlation Coefficient: Estimating Coupling in Non-Stationary Neurophysiological Signals. *Front. Neurosci.* **2024**, *18*. <https://doi.org/10.3389/fnins.2024.1422085>.

Czoch, A.; Kaposzta, Z.; Mukli, P.; **Stylianou, O.**; Eke, A.; Racz, F. S. Resting-State Fractal Brain Connectivity Is Associated with Impaired Cognitive Performance in Healthy Aging. *GeroScience* **2024**, *46* (1), 473–489. <https://doi.org/10.1007/s11357-023-00836-z>.

Kaposzta, Z.; Czoch, A.; Mukli, P.; **Stylianou, O.**; Liu, D. H.; Eke, A.; Racz, F. S. Fingerprints of Decreased Cognitive Performance on Fractal Connectivity Dynamics in Healthy Aging. *GeroScience* **2023**. <https://doi.org/10.1007/s11357-023-01022-x>.

Stylianou, O.; Kaposzta, Z.; Czoch, A.; Stefanovski, L.; Yabluchanskiy, A.; Racz, F. S.; Ritter, P.; Eke, A.; Mukli, P. Scale-Free Functional Brain Networks Exhibit Increased Connectivity, Are More Integrated and Less Segregated in Patients with Parkinson's Disease Following Dopaminergic Treatment. *Fractal Fract.* **2022**, *6* (12), 737. <https://doi.org/10.3390/fractalfract6120737>.

Kaposzta, Z.; Czoch, A.; **Stylianou, O.**; Kim, K.; Mukli, P.; Eke, A.; Racz, F. S. Real-Time Algorithm for Detrended Cross-Correlation Analysis of Long-Range Coupled Processes. *Front. Physiol.* **2022**, *13*. <https://doi.org/10.3389/fphys.2022.817268>.

Racz, F. S.; Czoch, A.; Kaposzta, Z.; **Stylianou, O.**; Mukli, P.; Eke, A. Multiple-Resampling Cross-Spectral Analysis: An Unbiased Tool for Estimating Fractal Connectivity With an Application to Neurophysiological Signals. *Front. Physiol.* **2022**, *13*. <https://doi.org/10.3389/fphys.2022.817239>.

Stylianou, O.; Racz, F. S.; Kim, K.; Kaposzta, Z.; Czoch, A.; Yabluchanskiy, A.; Eke, A.; Mukli, P. Multifractal Functional Connectivity Analysis of Electroencephalogram Reveals Reorganization of Brain Networks in a Visual Pattern Recognition Paradigm. *Front. Hum. Neurosci.* **2021**, *15*. <https://doi.org/10.3389/fnhum.2021.740225>.

Mukli, P.; Csipo, T.; Lipecz, A.; **Stylianou, O.**; Racz, F. S.; Owens, C. D.; Perry, J. W.; Tarantini, S.; Sorond, F. A.; Kellawan, J. M.; Purebl, G.; Yang, Y.; Sonntag, W. E.; Csiszar, A.; Ungvari, Z. I.; Yabluchanskiy, A. Sleep Deprivation Alters Task-related Changes in Functional Connectivity of the Frontal Cortex: A Near-infrared Spectroscopy Study. *Brain Behav.* **2021**, *11* (8). <https://doi.org/10.1002/brb3.2135>.

Mukli, P.; Nagy, Z.; Racz, F. S.; Portoro, I.; Hartmann, A.; **Stylianou, O.**; Debreczeni, R.; Bereczki, D.; Eke, A. Two-Tiered Response of Cardiorespiratory-Cerebrovascular Network to Orthostatic Challenge. *Front. Physiol.* **2021**, *12*. <https://doi.org/10.3389/fphys.2021.622569>.

Stylianou, O.; Racz, F. S.; Eke, A.; Mukli, P. Scale-Free Coupled Dynamics in Brain Networks Captured by Bivariate Focus-Based Multifractal Analysis. *Front. Physiol.* **2021**, *11* (February), 1–14. <https://doi.org/10.3389/fphys.2020.615961>.

Racz, F. S.; Farkas, K.; **Stylianou, O.**; Kaposzta, Z.; Czoch, A.; Mukli, P.; Csukly, G.; Eke, A. Separating Scale-Free and Oscillatory Components of Neural Activity in Schizophrenia. *Brain Behav.* **2021**. <https://doi.org/10.1002/brb3.2047>.

Kaposzta, Z.; **Stylianou, O.**; Mukli, P.; Eke, A.; Racz, F. S. Decreased Connection Density and Modularity of Functional Brain Networks during N-back Working Memory Paradigm. *Brain Behav.* **2021**, *11* (1), 1–16. <https://doi.org/10.1002/brb3.1932>.

Racz, F. S.; **Stylianou, O.**; Mukli, P.; Eke, A. Multifractal and Entropy-Based Analysis of Delta Band Neural Activity Reveals Altered Functional Connectivity Dynamics in Schizophrenia. *Front. Syst. Neurosci.* **2020**, *14* (July), 1–22. <https://doi.org/10.3389/fnsys.2020.00049>.

Racz, F. S.; **Stylianou, O.**; Mukli, P.; Eke, A. Multifractal and Entropy Analysis of Resting-State Electroencephalography Reveals Spatial Organization in Local Dynamic Functional Connectivity. *Sci. Rep.* **2019**, 9 (1), 13474. <https://doi.org/10.1038/s41598-019-49726-5>.

Racz, F. S.; **Stylianou, O.**; Mukli, P.; Eke, A. Multifractal Dynamic Functional Connectivity in the Resting-State Brain. *Front. Physiol.* **2018**, 9 (November), 1–18. <https://doi.org/10.3389/fphys.2018.01704>.

Honors

PhD Scholarship, Semmelweis University, Hungary

2019 – 2022

3rd Prize at Neurology and Neurovascular Medicine Section, OTDK Conference, Hungary

April 2019

1st Prize at Neuroscience Section, TDK Conference Semmelweis University, Hungary

February 2019

2nd Prize at Basic Science Section, Semmelweis International Students' Conference, Hungary

February 2019

1st Prize at Rector Thesis Competition, Semmelweis University, Hungary

January 2019

3rd Prize at Basic Science Section, Semmelweis International Students' Conference, Hungary

February 2017

2nd Publication Prize for Aging Research at Medical School of Brandenburg, Germany

November 2025

Certifications

Introduction to Programming with MATLAB, Vanderbilt University, USA

[Certificate](#)

Single Variable Calculus, University of Pennsylvania, USA

[Certificate](#)

UT.5.05x: Linear Algebra – Foundations to Frontiers, The University of Texas System, USA

[Certificate](#)

6.86x: Machine Learning with Python – From Linear Models to Deep Learning, Massachusetts Institute of Technology, USA

[Certificate](#)

6.431x: Probability – The Science of Uncertainty and Data, Massachusetts Institute of Technology, USA

[Certificate](#)

18.6501x: Fundamentals of Statistics, Massachusetts Institute of Technology, USA

[Certificate](#)

Data Analysis for Social Scientists, Massachusetts Institute of Technology, USA

[Certificate](#)

Experimental animals – B Level, Semmelweis University, Hungary

SEMÁB-B/079/2019

United States Medical Licensing Examination Step 1

Pass

Conferences

MindBrainBody Symposium 2025, Germany

Poster - March 2025

PhD Scientific Days, Semelweis University, Hungary

Presentation - July 2021

PhD Scientific Days, Semelweis University, Hungary

Presentation - August 2020

Frigyes Koranyi Science Forum, RECOOP HST Association, Hungary

Poster - March 2018

TDK Conference, Semelweis University, Hungary

Presentation - February 2018