Ali Yalcinkaya

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Education

Istanbul Medipol University
Istanbul, Turkey

M.Sc. in Neuroscience — *2022 - 2025*

- GPA: 3.48/4.00
- Thesis: Effects of DLPFC-targeted tDCS on Resting-State Networks and Cognitive Recovery in Acute Stroke Patients: An fMRI Study
- Supervisor: Prof. Dr. Lutfu Hanoglu

Istanbul Medipol University
Istanbul, Turkey

B.Sc. in Psychology — *2016 - 2021*

- GPA: 3.61/4.00 (Graduated with honors)
- Included 1-year English Preparatory School

Research Experience

Alanya Alaadin Keykubat University Education and Research Hospital
Antalya, Turkey

Graduate Researcher — *Dec 2023 - Jul 2024*

- Conducted neuromodulation (tDCS/tACS) and neuropsychological assessments in 60+ neurological and psychiatric patients.
- Designed and optimized MRI acquisition protocols in collaboration with MRI technicians to improve data quality.
- Performed multimodal neuroimaging analysis using advanced computational methods including graph theory and entropy measures.
- Co-authored 5 publications investigating cognitive impairment and brain connectivity in neurological disorders.

Supervisor: Prof. Dr. Burak Yulug

Istanbul Medipol University - Multiple Research Labs
Istanbul, Turkey

Graduate Researcher and Neuropsychologist — *Sep 2022 - May 2025*

Functional Imaging and Cognitive-Affective Neuroscience Lab (fINCAN), SABITA

- Developed automated pipelines for large-scale fMRI analysis (n>200 subjects) using Python, MATLAB, and Bash on HPC clusters.
- Implemented machine learning approaches including MVPA algorithms to decode cognitive states from fMRI data.
- Applied network analysis methods including graph theory, dynamic FC, and complexity measures.
- Automated preprocessing and quality control workflows using fMRIPrep, Nipype, and custom scripts.

Clinical Electrophysiology, Neuroimaging and Neuromodulation Lab, Medipol MEGA University Hospital

- Administered neuromodulation protocols (tDCS/tACS) to 50+ patients with stroke, TBI, MCI, Alzheimer's and Parkinson's disease
- Conducted neuropsychological assessments (e.g., MoCA, WAIS, WMS) to 30+ patients across diverse clinical populations.
- Acquired and analyzed EEG data using time-frequency analysis methods in EEGLAB.

Supervisor: Prof. Dr. Lutfu Hanoglu

Erenkoy Mental and Nervous Diseases Training and Research Hospital
Istanbul, Turkey

Undergraduate Intern — *Sep 2021 - Dec 2021*

- Conducted clinical observations and interviews with patients diagnosed with schizophrenia, bipolar, and personality disorders.
- Collaborated in multidisciplinary case conferences to discuss diagnosis and treatment planning.
- Observed electroconvulsive therapy (ECT) procedures and clinical monitoring protocols.
- Completed supervised training in psychological assessment, crisis intervention, and therapeutic communication.

Skill Sets

Programming	Python (*NumPy, Pandas, Matplotlib, Scikit-learn*), R (*ggplot2, tidyverse*), MATLAB, Bash/Shell
Development Tools	Git/GitHub, UNIX/Linux, HPC/SLURM, Jupyter, LaTeX
Statistical Analysis	Linear/Mixed-Effects Models, GLM, Permutation Testing, Multiple Comparisons Correction
Neuroimaging Analysis	EEG (*EEGLAB*), fMRI (*FSL, SPM, CONN, fMRIPrep, Nipype*), sMRI (*FreeSurfer, ANTs*)
Computational Methods	Machine Learning (*MVPA*), Network Analysis (*Graph Theory, Dynamic/Static FC*), Multiscale Entropy, ICA
Neuromodulation	tDCS, tACS, TMS
Data Acquisition	fMRI, EEG, Neuropsychological Testing, PsychoPy
Language	Turkish (Native), English (Advanced)

Selected Projects

Phenomenological and Neural Correlates of REM Dream and Waking Consciousness

COST Action CA18106 - The Neural Architecture of Consciousness

Research Scholar — *2022 - 2025*

- Developed and validated the Dream Consciousness Scale (RU-BIL) for quantifying phenomenological aspects of dream experiences.
- Conducted overnight polysomnography recordings in sleep laboratory, performing REM awakenings and consciousness assessments.
- Presented findings at international COST Action meetings, collaborating with research teams from multiple European countries.
- Collaborated with computational neuroscientists on EEG analysis and machine learning classification of consciousness states.

Comparing Memory Retrieval Mechanisms in REM Dream and Wakefulness

Researcher — *2024 - 2025*

- Designed experimental protocol comparing dream recall mechanisms in REM versus waking memory using naturalistic scenarios.
- Conducted time-frequency EEG analyses to examine neural oscillations during memory retrieval in both consciousness states.
- Implemented novel methodology combining sleep EEG with cognitive testing paradigms.

Publications

Yulug, B., **Yalcinkaya, A.**, Safa, S.S. et al. (2025). **Subjective cognitive decline in major depressive patients is associated with altered entropy and connectivity changes of temporal and insular region.** *Translational Psychiatry*, *15*, 335. https://doi.org/10.1038/s41398-025-03518-w

Yulug, B., **Yalcinkaya, A.**, Sayman, C., et al. (2025). **Cognitive impairment in tension-type headache is associated with altered hippocampal functional connectivity.** *iScience* (In Press).

Cankaya, S., Ayyildiz, B., Sayman, D., ...**Yalcinkaya, A.**, ... & Yulug, B. (2024). **Hippocampal connectivity dynamics and volumetric alterations predict cognitive status in migraine: A resting-state fMRI study.** *Neuroimage*, 120961. https://doi.org/10.1016/j.neuroimage.2024.120961

Under Review

Yulug, B., Karakus, A., **Yalcinkaya, A.**, et al. **Transcranial alternating current stimulation at individual theta frequency enhances cognition through modulation of hippocampal connectivity.** (Under review at *Brain Stimulation*)

Yulug, B., **Yalcinkaya, A.**, Sayman, C., et al. (2025). **Association of cognitive impairment with cognitive networks, pulvinar, and regional entropy in multiple sclerosis.** (Under review at *Translational Medicine*)

Submitted

Cadirci Tungac, F., Akturk, A., Sayman, D., et al., **Yalcinkaya, A.**, et al. (2025). **Transcranial Direct Current Stimulation improves emotional recognition in healthy individuals.** (Submitted to *Nature Electronics*)

Awards and Scholarships

COST Action CA18106 Grant - The Neural Architecture of Consciousness *2022-2025*

TUBITAK 2224-A Grant - Participation in Scientific Meetings Abroad - 6th Intl. Brain Stimulation Conference, Kobe, Japan *2025*

TUBITAK BAP Scholarship - The Scientific and Technological Research Council of Turkey *2022-2025*

Certificate of Honor and Excellence - Bachelor of Arts, Istanbul Medipol University *2021*

Conference Presentations

Yalcinkaya, A., Yulug, B., Hanoglu, L., Ozdemir Oktem, E., Sayman, C., Cankaya, S., & Sayman, D. (2025, February). Anodal tDCS over the left DLPFC modulates brain connectivity and cognitive recovery after acute mild stroke [Poster]. *6th International Brain Stimulation Conference, Kobe, Japan.*

Yalcinkaya, A., Yulug, B., Hanoglu, L., Sayman, D., Oktem, E. O., Sayman, C., & Cankaya, S. (2024, June). The effect of anodal tDCS on post-stroke cognitive impairment in the acute phase: A pilot study [Virtual]. *10th Congress of the European Academy of Neurology, Helsinki, Finland.*

Yulug, B., Ozdemir Oktem, E., Sayman, D., Cankaya, S., Ozsimsek, A., Sayman, C., **Yalcinkaya, A.**, & Hanoglu, L. (2024, June). Cognitive impairment and pulvinar volume alterations in MS patients [Virtual]. *10th Congress of the European Academy of Neurology, Helsinki, Finland.*

Yildiz, Z., Velioglu, H. A., Senturk, H., **Yalcinkaya, A.**, & Hanoglu, L. (2022). Developing a "Dream Consciousness Scale" to compare various forms of consciousness based on constituent elements of the consciousness scene [Poster]. *21st Turkish Neuroscience Congress, Turkey.*

Teaching & Mentoring

Graduate Research Mentor, Istanbul Medipol University *2023-2025*

Trained 5+ graduate students in neuroimaging data analysis (fMRI preprocessing, connectivity analysis, HPC cluster usage), neuropsychological assessment protocols, and neuromodulation techniques (tDCS/tACS). Developed hands-on tutorials and provided ongoing technical support for laboratory methods and computational workflows.

References

Dr. Burak Yulug, Full Professor
Department of Neurology and Neuroscience
Alanya Alaaddin Keykubat University
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Dr. Lutfu Hanoglu, Full Professor
Research Institute for Health Sciences and Technologies (SABITA)
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Dr. Halil A. Velioglu, Postdoctoral Fellow
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Psychiatric Neuro Center, New York, USA
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