Farhad Farkhondeh Tale Navi

Assistant Professor

College: Education & Psychology

I hold a Ph.D. in Cognitive Neuroscience, with a strong foundation in engineering. My research focuses on decision-making, memory systems, brain oscillations, and cognition. I am particularly interested in leveraging cutting-edge approaches, such as closed-loop systems, machine learning, neuromodulation techniques, and computational neuroscience, to drive advancements in brain and cognitive research.

Competitions

Farhad Farkhondeh Tale Navi is an Assistant Professor in the Department of Cognitive Neuroscience at the University of Tabriz, Iran. With a Ph.D. in Cognitive Neuroscience and an engineering background, his research focuses on decision-making, memory systems, brain oscillations, and cognition in both animals and humans. He employs innovative methodologies such as closed-loop systems, machine learning, neuromodulation techniques, and computational neuroscience to advance understanding in brain and cognition research.

Key Research Interests:

1. **Closed-loop Neuromodulation**: Investigating how real-time feedback can be used to modulate brain activity for therapeutic or cognitive enhancement purposes.
2. **Numerical Cognition**: Exploring how the brain processes numerical information and the underlying neural mechanisms.
3. **Decision Making**: Studying the neural and cognitive processes involved in making decisions, particularly in high-stakes or emotionally charged contexts.
4. **Computational Neuroscience**: Applying mathematical models and computational techniques to understand brain function and behavior.

Notable Publications:

- **Closed-loop modulation of the self-regulating brain**: A comprehensive review on approaches and experimental designs in neuromodulation (Neuroscience, 2022).
- **Time distortions induced by emotional faces**: An event-related potential study examining how high-arousing emotional faces affect time perception (Psychological Research, 2023).
- **Number-hand congruency effect**: Behavioral and electrophysiological evidence supporting the interaction between numerical processing and motor responses (Acta Psychologica, 2023).
- **Machine learning-based classification of risk-takers**: Using resting-state EEG data to distinguish between risk-prone and risk-averse individuals (Brain and Behavior, 2023).
- **Emotions and mental number line**: Investigating how emotions influence accuracy and bias in numerical cognition (Cognition and Emotion, 2024).

Recent Projects:

- **Adaptive closed-loop modulation of cortical theta oscillations**: Insights into navigational decision-making (Brain Stimulation, 2024).
- **Social dominance and neural dynamics**: Exploring behavioral and neural correlates of social hierarchy and inhibitory control (Behavioural Brain Research, 2024).
- **Training the brain to time**: Neurofeedback of SMR–Beta1 rhythm and its impact on time perception (Experimental Brain Research, 2022).

Metrics:

- **Citations**: 43
- **h-index**: 4

Farhad Farkhondeh Tale Navi's work bridges the gap between engineering and cognitive neuroscience, leveraging advanced technologies to unravel the complexities of the human brain and behavior. His contributions to closed-loop neuromodulation and numerical cognition are particularly noteworthy, offering new insights into how we can harness brain activity for cognitive enhancement and therapeutic interventions.

Conferences

Academic Contributions:

- **Computational Approaches in Social and Cognitive Neuroscience**: Presented at BCNC2023, highlighting the integration of computational methods in neuroscience research.
- **Panel on Closed-Loop Neurofeedback Systems**: Participated in discussions on the future of neurofeedback systems at BCNC2018.

Membership in Scientific Societies

Iranian Neuroscience Society

Papers in Conferences

1. فرهاد فرخنده طالع ناوی و سایر،Closed-Loop Neurofeedback System: An Innovative Technical Setup for Animal Brain Stimulation Research،۱۰th Internathional conference on Cognitive Science،۱۴۰۳/۰۲/۲۶،تهران.
2. کیمیا خجند , فرهاد فرخنده طالع ناوی , سیدمحمدرضا سیدنورانی ,Neuromusculoskeletal Modeling of Elbow Flexion/Extension – Aided by OpenSim ,Advanced Engineering Days ,2024/07/09, تبریز.

Papers in Journals

1. Farhad Farkhondeh Tale Navi et al.,Adaptive Closed-Loop Modulation of Cortical Theta Oscillations: Insights into the Neural Dynamics of Navigational Decision-Making,Brain Stimulation,Vol. 17,pp. 1101-1118,2024 9 12.
2. Hadi Mohamadpour, Farhad Farkhondeh Tale Navi, Soomaayeh Heysieattalab, Metehan Irak, Abdolhossein Vahabie, Behzad Nikzad,How is social dominance related to our short-term memory?An EEG/ERP investigation of encoding and retrieval during a working memory task,Heliyon,Vol. 10,pp. e37389,2024 6 15.
3. Mohammad Ali Nazari, Sedigheh Naghel, Sevda Abbasi, Ayda Khayyat Naghadehi, Behzad Nikzad, Saied Sabaghypour, Farhad Farkhondeh Tale Navi,Electrophysiological correlates of cognitive control and performance monitoring in risk propensity: An event-related potential study,Brain and Cognition,pp. Volume 175, March 2024, 106136,2024/3/1.
4. Reza Eyvazpour, Farhad Farkhondeh Tale Navi, Elmira Shakeri, Behzad Nikzad, Soomaayeh Heysieattalab،Machine learning-based classifying of risk-takers and risk-aversive individuals using resting-state EEG data: A pilot feasibility study،Brain and Behavior،۲۷ ۹ ۱۳،۲۰۲۳ مجلد.
5. Farhad Farkhondeh Tale Navi, Soomaayeh Heysieattalab, Dhakshin S Ramanathan, Mohammad Reza Raoufy, Mohammad Ali Nazari,Closed-loop modulation of the self-regulating brain: A review on approaches, emerging paradigms, and experimental designs,Neuroscience,pp. Volume 483, 10 February 2022, Pages 104-126,2022/2/10.
6. Reza Eyvazpour, Farhad Farkhondeh Tale Navi, Elmira Shakeri, Behzad Nikzad, Soomaayeh Heysieattalab,Machine learning-based classifying of risk-takers and risk-aversive individuals using resting-state EEG data: A pilot feasibility study,Brain and Behavior,2023-9.
7. Saied Sabaghypour, Farhad Farkhondeh Tale Navi, Elena Kulkova, Parnian Abaduz, Negin Zirak, Mohammad Ali Nazari,The dark and bright side of the numbers: how emotions influence mental number line accuracy and bias,Cognition and Emotion,2023 11 21.