Special Issue

Neural Correlates of Cognitive Workload and Learning: Portable Brain Monitoring During Skill Acquisition and Real-World Task Performance

Message from the Guest Editors

The emergence of portable neuroimaging technologies has revolutionized our ability to study cognitive function and skill acquisition in naturalistic environments, including in high-fidelity simulators, or even in actual field conditions. From surgical training to e-sports performance, and from flight simulation to motor rehabilitation, portable neuroimaging offers unprecedented insights into the neural substrates of expertise. Rather than being constrained to laboratory-based paradigms, we can now track cortical hemodynamic changes during actual laparoscopic procedures, measure attentional networks during competitive gaming sessions, or monitor motor cortex reorganization during sports training. This Special Issue welcomes empirical studies that leverage portable neuroimaging to investigate skill acquisition in ecologically valid settings. We particularly encourage submissions that demonstrate practical training applications, validate assessment protocols, or develop open-source tools for the research community.

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You are invited to contribute a research article or a comprehensive review for consideration and publication in *Brain Sciences* (ISSN 2076-3425). *Brain Sciences* is an open access, peer-reviewed scientific journal that publishes original articles, critical reviews, research notes, and short communications on neuroscience. The scientific community and the general public can access the content free of charge as soon as it is published.

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