

Bioimage Classification in Sport-Cognition Applications

Yan-Bin Chen (陳彥賓)

Master Program in Statistics, National Taiwan University

Abstract

Bioimage classification provides valuable insights into the connection between sport and cognition. This study explores methods for analyzing sport-related bioimages, such as EEG signals, to identify cognitive states linked to athletic activity. Using statistical techniques and deep learning models, we extract features that distinguish levels of attention and motor coordination. Results indicate that combining advanced machine learning with tailored preprocessing improves classification accuracy across tasks. These findings suggest that bioimage classification can support personalized training, enhance cognitive performance, and deepen understanding of the interaction between athletic activity and cognitive processes.

Keyword: bioimage, machine learning