

Neurophysiological and behavioral predictors of visuomotor performance in an immersive VR marksmanship task

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Abstract

The design of effective training environments relies on identification of individual predictors of performance. This talk will overview recent efforts towards developing a biomarker of individual visuomotor performance based on aperiodic resting-state neural dynamics. In addition, the talk will present work aimed at identifying individual attention, working memory and cognitive flexibility behavioral determinants of visuomotor performance. Development of an immersive VR marksmanship task designed to assess perceptual and action dimensions of visuomotor performance as well as enhance cognitive determinants of decision-making will then be discussed.

About the speaker

Associate Professor Maarten Immink is based in Flinders University, Australia, where he leads research aimed at understanding the neurocognitive processes underlying skilled movement acquisition and performance. His research informs design of skill training environments to optimize performance outcomes in industry, defence and sport settings, and rehabilitation efficacy in clinical practice.