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A Clinician's Perspective on Electroencephalography Annotation and Analysis for Driver Drowsiness Estimation

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Abstract : Human errors caused by drowsiness are among the leading causes of road accidents. Neurobiological research gives information about the electrical signals emitted by neurons firing within the brain. Electrical signal frequencies can be determined by attaching bio-sensors to the head surface. By observing the electrical impulses and the rhythmic interaction of neurons with each other, we can predict the mental state of a person. In this paper, we aim to better understand intersubject and intrasubject variability in terms of electrophysiological patterns that occur at the onset of drowsiness and their evolution with the decreasing of vigilance. The purpose is to lay the foundations for an algorithm that detects the onset of drowsiness before the physical signs become apparent.

Keywords : electroencephalography, drowsiness, ADAS, annotations, clinician
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