

Experimental Design and Collection of Brain and Respiratory Data for Detection of Driver's Attention



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Attention of drivers is very important for road safety and it is worth observing even in laboratory conditions during a simulated drive. This paper deals with design of an experiment investigating driver's attention, validation of collected data, and first preprocessing and processing steps used within data analysis. Brain activity is considered as a primary biosignal and is measured and analyzed using the techniques and methods of electroencephalography and event related potentials. Respiration is considered as a secondary biosignal that is captured together with brain activity. Validation of collected data using a stacked autoencoder is emphasized as an important step preceding data analysis.

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