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Title	The Importance of Gender Specification for Detection of Driver Fatigue using a Single EEG Channel
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Abstract
Although detection of the driver fatigue using a single electroencephalography (EEG) channel has been addressed in literature, the gender differentiation for applicability of the model has not been investigated heretofore. Motivated accordingly, we address the detection of driver fatigue based the gender segregated datasets, where each of them contains 8 subjects. After splitting the EEG signal into its sub-bands (delta, theta, alpha, beta, and gamma) using discrete wavelet transform, the log energy entropy of each band is computed to form the feature vector. Afterwards, the feature vector is randomly split into 50% for training and 50% for the unseen testing, and fed to a support vector machine model. When comparing the classification results of fatigue driving detection between the gender segregated and non-gender segregated datasets, the former achieved the accuracy 78% and 77% for male and female subjects, respectively, than the latter (71%). The obtained results show the importance of gender-specification for the driver fatigue detection.