**ABSTRACT**

Video-based abnormal driving behaviour detection is becoming more and more popular for the time being, as it is highly important in ensuring safeties of drivers and passengers in the vehicle, and it is an essential step in realizing automatic driving at the current stage. Thanks to recent developments in deep learning techniques, this challenging detection task can be largely facilitated via the prominent generalization capability of sophisticated deep learning models as well as large volumes of video clips which are indispensable for thoroughly training these data-driven deep learning models.

deep learning fusion techniques are emphasized, and three novel deep learning-based fusion models inspired by the recently proposed and popular densely connected convolutional network (Dense Net) are introduced, to fulfil the video-based abnormal driving behaviour detection task for the first time.