

Driver Drowsiness Detection System Using Convolutional Neural Networks

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Abstract: *In recent years, the rise of car accident fatalities has grown significantly around the world. Hence, road security has become a global concern and a challenging problem that needs to be solved. The deaths caused by road accidents are still increasing and currently viewed as a significant general medical issue. The most recent developments have made in advancing knowledge and scientific capacities of vehicles, enabling them to see and examine street situations to counteract mishaps and secure travelers. Therefore, the analysis of driver's behaviors on the road has become one of the leading research subjects in recent years, particularly drowsiness, as it grants the most elevated factor of mishaps and is the primary source of death on roads. This project presents a way to analyze and anticipate driver drowsiness by applying a Convolutional Neural Network over a sequence frame driver's face. We used a dataset to shape and approve our model and implemented repetitive neural network architecture multi-layer model-based 3D Convolutional Networks to detect driver drowsiness. After a training session, we obtained a promising accuracy that approaches a 92% acceptance rate, which made it possible to develop a real-time driver monitoring system to reduce road accidents.*

Keywords: Video, CNN, Open-CV, Haar Classifier

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