Abstract

More sophistication in vehicle's state of art technologies in driver assistance systems and stringent laws implemented by the governments did not stop any of the road accidents in the developing countries like India. The report shows that India contributes nearly 9.5% of the total 1.2 million road accidents globally. Among that, nearly 60-70% of road accidents are due to manmade faults like attention-less driving, usage of mobile phones while driving, intoxication of alcohol or any other drugs. The proposed system is designed based on the ground breaking concept known as "humanizing technology," which monitors the physiological changes especially in human brain and facial expressions of the driver and get processed using Gabor filters and SVM linear kernel classifier. The system can crisscross autonomously whether the ignition should get initiated or not. This type of system not only helps the drivers from the accidents, but also a great paradise for pedestrians.
Analysis of EEG Signals and Facial Expressions to Detect Drowsiness and Fatigue using Gabor Filters and SVM Linear Classifier

- Jessy Parokaran Varghese (2009) "Analysis of EEG Signals For EEG-based Brain-Computer Interface School" School of Innovation, Design and Technology Mälardalen University Vasteras, Sweden July 2009
- Chunlin Zhao, Min Zhao, Jianpin Liu, Chongxun Zheng (2012), "Electroencephalogram and Electrocardiograph assessment of mental fatigue in a driving simulator" Accident Analysis and Prevention 45 (2012) 83–90
- Paul Ekman (2003) "Emotions Revealed- Recognizing faces and feelings to improve communication and emotional life;"
- Gabor D, Dr. Ing (1945) "Theory of communication;"

**Index Terms**

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