



Project Title:	Real Time Cognitive Distractions Detection on a Driver via Physiological Measurements for Active Safety Purposes
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Project Description:

Basically the research area is about to detect an existence of cognitive workload while a driver is performing his driving skills on a road. On a road, driver can be distracted by a visual, manual and cognitive type of distractions. Visual distraction is referring to eyes off the road, manual distraction is hands off the steering and cognitive distraction is mind off the road. The cognitive workloads are possibly can undermine the driver's concentration on the road. The distractions will be detected through multimodalities of physiological measurement including eye position, eye's blinking event, blinking fixation and duration, gaze direction, lips behaviour eyebrows behaviour, head orientation and eyelids movement in a real time. Data are collected in a real time environment by using faceLab Seeing Machine version 4.6 device which is currently has been setup in Ergonomics and Safety Road Institute (ESRI) in Loughborough University. The combination of the information will determine whether a driver is cognitively distracted or not. A Bayesian Network algorithm will be used to calculate the probability existence of distraction. Later a warning system will be triggered to avoid any accident for an active safety reason to avoid a driver get involves with an accident.