

## **Distracted Driving**

### **1. Introduction of the effect of distracted driving**

As car improves and education on driving increases in recent years, car accidents decline significantly, but at the same time the death rate in a car accident goes up. Road crash is one of the leading causes of death in United State (according to CDC). According to IIHS, there were 38,824 deaths in 2020 due to road crash in the country. Of many causes for road crash, distracted driving is undoubtedly the number one reason, which results in great loss of both lives and properties. Hence, it is important to identify and avoid distracted driving. This exactly motivates the design of the Distracted Driver Project.

### **2. Category of distracted driving**

#### **2.1 . texting**

According to NHTSA, one of the biggest causes of distracted driving is texting. Studies show that 1 out of every 4 car accidents in US is caused by texting-related distracted driving, probably 6 times more than drunk driving. Texting on phone takes away people's attention for about five seconds or more. It doesn't sound long. But when people are driving at 55 mph, it is about 403 feet that people travel in 5 seconds. This means that drivers distracted by texting can bump into any situations like traffic lights, coming cars, bikers and passengers in five seconds. Then, road crash happens and a disaster comes. For example, as reported in New York Times, in 2019 a scientist at New Jersey fragrance manufacturer was taking a walk for her break from work, and suddenly she was crashed by a car. The driver Alexandra Mansonet, when she bumped on to someone she was just texting on her cellphone about dinner. This is why texting while driving can result in charges from \$20 to \$500 and even jail time in some states of US.

#### **2.2 eating and drinking**

According to NHTSA, Another biggest cause for distracted driving is eating and drinking. Studies show that eating and drinking while driving can increase the chance of getting a car accident by 80%, and that 65% of near miss car accidents are caused by distracted drivers who are eating or drinking. In most cases, eating while driving requires two hands, meaning that when people try to take off a bottle's cap their two hands will need to take off from the steering wheel, making the car unable to run under control, not to mention that the driver's attention could be taken away from the road. Consequently, disasters properly happen. For example, if your search on Youtube for 'A truck driver gets into an accident while reaching out for food', you can see a video of how the driver proceeds to get a food and just had few seconds not paying attention and a car accident happens.

### **3. Conclusion**

Meanwhile, there are other causes for distracted driving, including talking, operating the radio, reaching behind, or applying makeup, according to NHTSA. All these actions can distract drivers from

the road and make them unable to fully direct the car, leading to car crashes, injuries, and even loss of lives. Thus, it is critical to identify and avoid distracted driving. The Distracted Driver Project we are working on is a project mainly to determine if the driver is distracted while driving a car. In this project we first have two groups of photo, train and test. On to it, the photos in test folder is sectioned into 10 folders base on the different distracted reason. Then base on the sectioned photo we will let the computer to self-train using the train photos, and get what the driver is doing as the result.

#### 4. Why need the 10 categories

The 10 classes there are to predict are 'safe driving', 'texting on right', 'texting on left', 'talking on the phone by right', 'talking on the phone by left', 'operating the radio', 'drinking', 'reaching behind', 'hair and makeup', and 'talking to passenger'.

C0	safe driving
C1	texting on right
C2	texting on left
C3	talking on the phone by right
C4	talking on the phone by left
C5	operating the radio
C6	drinking
C7	reaching behind
C8	hair and makeup
C9	talking to passenger

It is important to have these ten categories because some distractions are minor than the other and the reminder to the driver could be in different ways rather than just saying need to stay focused or not.