


EMOTION RECOGNITION

Group 18
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Project Idea

- We want to be able to detect want to focus on a software that can help increase security while driving
 - *We will be using emotion recognition to detect if a driver of a car is drowsy or tired*
 - *We are going to base it on Volvos truck solution, but use deep learning to teach the software*

Background

- Volvo Driver Alert Systems have been making their cars safer for over a decade. We want to make a software making it possible to install in cars where it hasnt been added.

Scope / Use cases

- The scope for this project is to create an emotion recognition software to detect drowsiness in drivers. We want to create a software using deep learning instead of image processing like used in some other Driver alerting systems.
 - *We want our software to be lightweight so it can be implemented in older cars where it is not already installed.*

Framework

- There are both existing libraries for face detection which is needed when going to detect emotion.
 - *We will develop this software using Python.*
 - *We will be using OpenCV aswell as existing facial recognition libraries to detect the faces before teaching our software about emotional expressions.*
 - *We will also use standardized methods to create the emotion recognition, and train it using a dataset*
 - *We are creating a webscrapper to gather or dataset, and if it doesnt give optimal results we will result in using existing dataset like «AffectNet».*

Application

- The application will in its final product use a webcam or another type of applicable camera.
- We will train it using deep learning.

Implementation plan

Week #	Planned tasks description
Week 37	Find sources for research
Week 38	Read and get familiar with with what is required to have a successful emotion recognition software / Start programming using the facial recognition library, and use a library for emotion recognition to get an idea of whats required.
Week 39	Start programming our own emotion recognition software, gather material and finish the first release report
Week 40	Continue work
Week 41	Finish the first software release
Week 42-44	Continue work
Week 45	Finish the final software and final release presentation
Week 46/47	Finish the final report