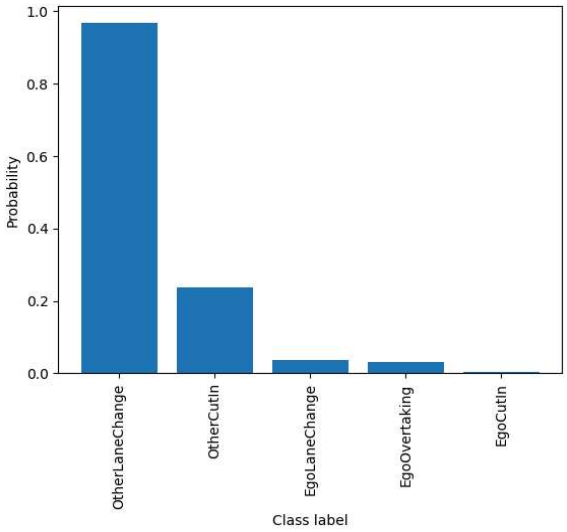
Instructions

Please take a close look at the clip and the information provided and answer the questions below.

Thanks for your support!

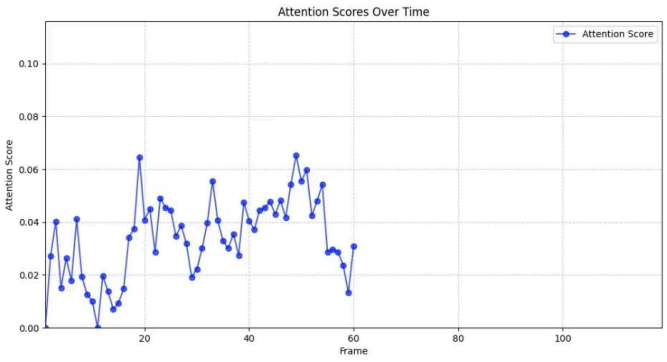
We have developed a model that is able to classify traffic scenarios on the highway. This model is based on a technology called “Transformer”. The Transformer processes all the details of the traffic situation and learns from many similar situations it has seen in the past. On this basis, the model can make predictions as to which traffic scenario or scenarios are involved in a given video. For the clip you just saw, our model made the following prediction:



The model classifies the scenario seen above with a probability of 96.68% as a lane change maneuver by the truck in front of the vehicle from which the video was recorded. This shows that the model is very sure that it is a lane change scenario of another vehicle (and not the vehicle that recorded the video).

Our model uses a method called “Attention Scores” to show how it makes decisions. Imagine watching a sequence of images in a video and trying to figure out what might happen next. If you focus on certain moments in particular because they are more important for the decision - for example, when a car crosses a lane marking - then you are doing exactly what our model does. The model evaluates each individual sequence in the video and decides which one is particularly important for making a prediction. The attention scores therefore show which moments in the video the model is particularly “attentive” to. The higher the score for a particular sequence, the more important this moment was for the model's decision. The following image shows the attention scores for two images from the video you saw at the beginning.

On the left, you can see the very first frame of the video, which has a very low attention score. This shows that this sequence is not particularly important for the prediction of the model. On the right you can see an image from the video, which has one of the highest attention scores. It is noticeable that the sequences in which the truck crosses the lane markings seem to be the most important for the model, which in turn indicates that the vehicle changes lanes as classified by the model. The development of the attention scores over the duration of the entire traffic scenario can be seen in the graph on the right in the following video:



What was our model's prediction for the traffic scenario in the video above?

Was it explained to you why the model predicted the scenario in the video as a lane change maneuver?

- ◯ Yes
- ◯ No

Please fill out the survey on the next page.

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