VDerive Assignment

AI/ML Development internship

Consider a scenario where we are trying to identify if there was an attack done by someone or it was an accident hit. Going through the above link at time 08:35:32 , Is it possible to identify the point of impact and angle of impact ? If possible, How ?

The idea and technique of employing "image classification" to resolve this situation.

- In order to detect whether an attack was carried out intentionally or by accident, we must first decide what to model for.

- Then, we must generate datasets based on these two classes, "attack" and "accident".

- Hence, employing these two classes, we must train the model in one of two ways. "Classification Using CNN from scratch" comes first. "Classification using Transfer Learning" is the second.

- Then we must utilise trained models, such as Yolo, Caffee, etc., to identify cars in each frame of the camera. Why? Because it facilitates application over the classification portion.

- The idea behind this scenario is actually to first recognise cars that are consistently present in the picture. We again generate a bounding box for each car when they are directly in front of one another and there is no space between them then we again create the bounding box. on the final bounding box is where we then apply classification part to check its "attack" or "accident".

- and at the particular time frame we take the picture of the frame and saved .then we check the classification part.

For this research, I compared the accuracy of the "Classification Using Transfer Learning" and "Classification Using CNN From Scratch" image classification techniques. I've shared my findings with you. And to grasp the entire scenario, I use the Kaggle dataset, which is not the precise dataset of "attack" and "accident," but it is similar.

I appreciate you giving me this assignment because it teaches me a lot. I've finished the training and detection, which I've shared with you. I'll try to finish the remaining portion, after which I'll share it with you again.

By NILESH BORANA