Model performance in real world case

Introduction:

The goal of this document is to demonstrate the AI model to the stakeholder. For the final demonstration I have developed a full-stack application with html/CSS/JavaScript for the front end and flask for the back-end.

Timing

The demonstration took place on the 23/01/2024

Demonstration Plan

The demonstration took place in Fontys TQ, Eindhoven

Introduction: I will show the web page to the stakeholders and explain its features.

Demonstration:

Successful car model prediction:
I input a picture of a car. The model of the car is a BWM. After uploading the car I get as an output the correct model of the car.

Not Successful Movie Scenario:
I input a picture of a car. The model of the car is a BWM. After uploading the car I get as an output the wrong model of the car.

Interactive Testing: The stakeholder will test the application.

Q&A Session: I will answer any questions given.

Demonstration video:

https://www.youtube.com/watch?v=FcY4oLDE9cw

Feedback Report on AI Model Demonstration

Stakeholder Profiles

[Welman,Nick N.P.M.]: He is one of my lecturers in the university on the current university semester.
[Zhen,Calvin R.M.]: One of my fellow classmates.

[Poll,Laurenz L.P. van de]: One of my fellow classmates.

Summary of Feedback

Transparency:

Understanding of the Model: The stakeholders have an understanding how the model works and the logic behind it.

Clarity and Explanations Provided: The stakeholders have a great understanding of the results and the functionality. They also gave ideas for future additions. Some of the ideas are to incorporate more pictures of different models and also add models that are newer like from 2020 or 2021.

Model Understanding: They know that the model uses pictures that it has been trained on and tries to check whether the uploaded pictures is similar of one of them.

Overall Evaluation of the Project

For these two weeks I managed to make an intermediate version of the model. Although the accuracy of the model is high 91% on test data it shows some level of overfitting. Future work could include strategies to reduce overfitting further, such as by expanding the training data, applying more aggressive data augmentation, or using regularization techniques. Also, it could be beneficial to perform error analysis to understand where the model makes mistakes and to use this information to further refine the training process. Additionally, some of the car models don't have pictures of each side of the car and that can confuse the model, adding more diverse images can improve the models ability to recognize the car

brand from all sides. Given the high performance on the test data, this model could be considered for deployment in a practical application, assuming that the test set is representative of the actual data it will encounter in production.