INDIVIDUAL REPORT

Course Title: Machine Learning and Pattern Recognition

Lecturer Name: Courtney Ford

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Individual report on Transfer Learning and Reflection of Learning

In my most recent project, I used transfer learning to create a deep learning model for image classification. Transfer learning is a technique that allows us to start with pre-trained models to train new models on various datasets. The goal behind transfer learning is to take what a pre-trained model has learnt from one dataset and apply it to another. This is especially valuable when working with limited data because the pre-trained model can serve as a starting point for training a new model that requires less data.

To develop the image classification model, I used a pre-trained model called Mobilenet_V2 as a starting point. Mobilenet_V2 is a convolutional neural network that has been trained on the ImageNet dataset, which contains millions of images across thousands of categories. By using Mobilenet_V2 as a starting point, I was able to leverage the knowledge that the model had learned from the ImageNet dataset and apply it to my own dataset of images.

The Mobilenet_v2 includes its own classifier layer or classification labels. I used this training model initially, then removed its own classification layer and added our classification layer, which had five categories labelled Product_1, Product_2, and so forth. The model attained an accuracy of more than 95% on both the training and validation datasets, which appears to be rather good.

In addition to my work on transfer learning, I also provided inputs to develop the rest of the models like CNN model and text analytics project. I worked closely with my team members to understand the requirements for each model and provided suggestions on the best approaches to take. I also provided feedback on the models that my team members developed and provided help to them and received help from them in the situations when they got stuck or I got stuck.

Overall, my work on transfer learning and providing inputs to develop the rest of the models was successful and contributed to the success of the project. By leveraging pre-trained models and providing suggestions to my team members, I was able to learn a lot about Image classification and text analytics which would be helpful in my career and future learning.