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Professor McManus

CNN-1 Chihuahuas or Muffins Lab

While working on this lab I was able to complete and understand all the coding sections of the lab. One of the first things I had to do was clone the repository from GitHub into the google colab notebook so that I could continue to work on it. This is because if I do not clone it from the start, it will throw me an error code that says there is no such data in my device. This is why, it is also extremely important to remember to always import all your libraries from the start so that your dataset can understand what you are trying to feed into it. Therefore, without organizing and preparing all your data and information for your dataset you will always run into error codes that cannot be fixed without knowing whatever it is they are. Finally, it is crucial to know and understand the importance of training and testing all your datasets so that they are always able to run as effective as possible.

Convolutional Neural Networks (CNNs) is a type of neural network with at least one convolutional layer and usually includes fully connected layers. We can use them (CNNs) for obtaining valuable information from our datasets and to reduce the overall complexity of our model in terms of their parameters. On the other hand, we have the most old and traditional neural networks (NN) which we used in our last assignment “Workshop 1”. Traditional Neural Networks are fully interconnected neurons that depend on the type of network and can be used for classification and regression. In addition, these neural networks are also used for things such as predicting stock markets, spam classification, fraud detection and weather forecasting.

This model did give me some trouble at the beginning because I had not cloned the GitHub repository prior to running the code cells. However, once I was able to upload it to my Google colab notebook, I was able to complete the rest of the tasks without any significant issues. Additionally, I was able to review and understand all the outputs that came from each one of the inputted commands. Therefore, the results of the model prediction were perfectly correct and helped me get a better understanding of each one of the cells and their purpose. Finally, I was able to complete and run all the code cells while fully understanding why each code cell was executed when it was and what each result was compared to what we expected from the start.

This model was much easier for me to understand and complete than the one we worked on previously because I already had an idea of what I was looking to complete. However, it was a bit different from the first one because it made predictions about what the outcome would be rather than just predicting the probability of whether it was a chihuahua or a muffin. Therefore, I would say the training and testing part was much easier for me than the last time because I was still getting used to working with it.

I personally did not run into many problems while working on this model, however, it was probably because the last one gave me a better idea of what I was supposed to work on. In addition, I also understood the assignment better than I did last time and that is why it allowed me to work on it from beginning to end without any error codes. Lastly, the only problems I ran into were the very same ones from last time so I knew how to properly solve them so that I would not receive the same error codes that I did the last time.

I could personally use this model's exact concept for real-world application by starting a chart of all the local places and making a prediction based on where I have previously gone and where I have never been. Meaning that this model would be able to successfully predict if I have been somewhere based on some basic questions and information about each spot. For example, if I have ever been to a mall before, the model would be able to predict yes or no by reviewing my survey answers about the place and how correct my answers were about it. Another particularly important real-world example could be predicting where someone is from based on their actions and how they differently they act when surrounded by others who they can or cannot relate to.

Furthermore, this model was extremely important to understand and complete because it was an introduction to Convolutional Neural Networks (CNNs) and how they may relate to or differentiate from traditional neural networks. Not only was I able to learn more about Convolutional Neural Networks but I was also able to look deeper into what they both bring to the table and how they can be used for different models depending on what the situation might be.

In conclusion, one of the main differences between both is that Convolutional Neural Networks use convolutional operations, which have major advantages when working with images of any kind. Because of this CNNs can reduce the number of parameters in the network that are used during the process.

<https://colab.research.google.com/github/patitimoner/workshop-chihuahua-vs-muffin/blob/master/CNN_1%20Chihuahua%20or%20Muffin.ipynb#scrollTo=vfQPM71vBw_9>

<https://ai.stackexchange.com/questions/5546/what-is-the-difference-between-a-convolutional-neural-network-and-a-regular-neur>