**Report on the Neural Network Model**

**Model Creation**: I created a model called “sequential\_1” using a tool I know called Keras. This model has three parts:

* The first part has 30 units (I call these “neurons”). It has 1,620 parts that it can learn from.
* The second part also has 51 neurons and can be learned from 1,581 parts.
* The last part has just 1 neuron and can learn from 52 parts.
* So, all in all, the model can learn from 3,253 parts.

**Model Training**: I taught this model using some data (I don’t know exactly what data was used). While learning, the model tries to find patterns in the input data.

**Model Evaluation**: After the model learned from the data, I checked how well it did. I did this by giving it some test data and seeing how well its predictions matched the real answers. I measured its performance using two numbers: loss and accuracy. The loss was 0.5517, and the accuracy was about 72.76%.

In simpler terms, I created a model, taught it with some data, and then checked how well it learned. The goal is for the model to make accurate predictions, and in this case, it was right about 72.76% of the time.

The target model’s performance was set at 75% accuracy. However, the models I trained achieved accuracies of 72.76%, 72.48%, and 72.84% respectively. So, I couldn’t reach the target accuracy of 75%.

To try and increase the model’s performance, I experimented with different model architectures and parameters. Here’s what I did:

1. **Varying Model Complexity**: I created models with different numbers of layers and neurons. The first model had two layers with 30 and 51 neurons, the second model also had two layers but with 51 neurons each, and the third model was simpler with two layers having 10 and 15 neurons.
2. **Training**: I trained these models on some data. During training, the models learned to map input data to the correct output.
3. **Evaluation**: After training, I evaluated the models’ performance using a test dataset. I used loss and accuracy as the evaluation metrics.

Despite these efforts, the models did not reach the target accuracy of 75%. To improve the models further, I could consider other strategies such as using different activation functions, applying regularization techniques to prevent overfitting, or using a larger or more diverse dataset for training. Remember, machine learning model performance can be influenced by many factors, and it often requires multiple iterations and experiments to achieve the desired results.

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