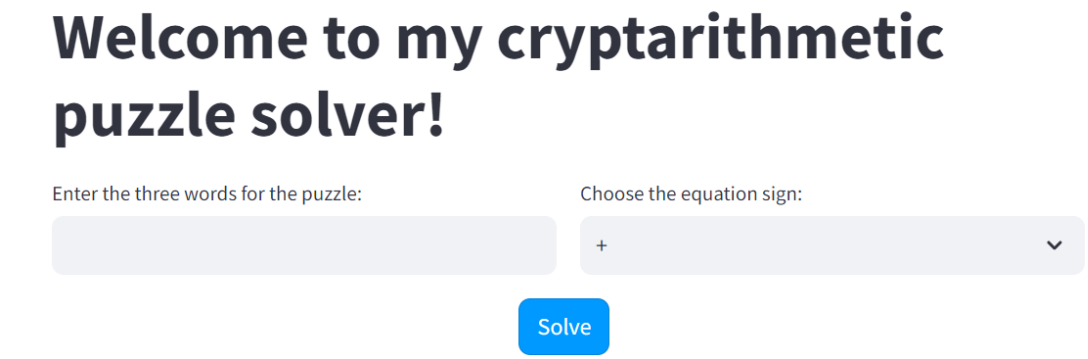
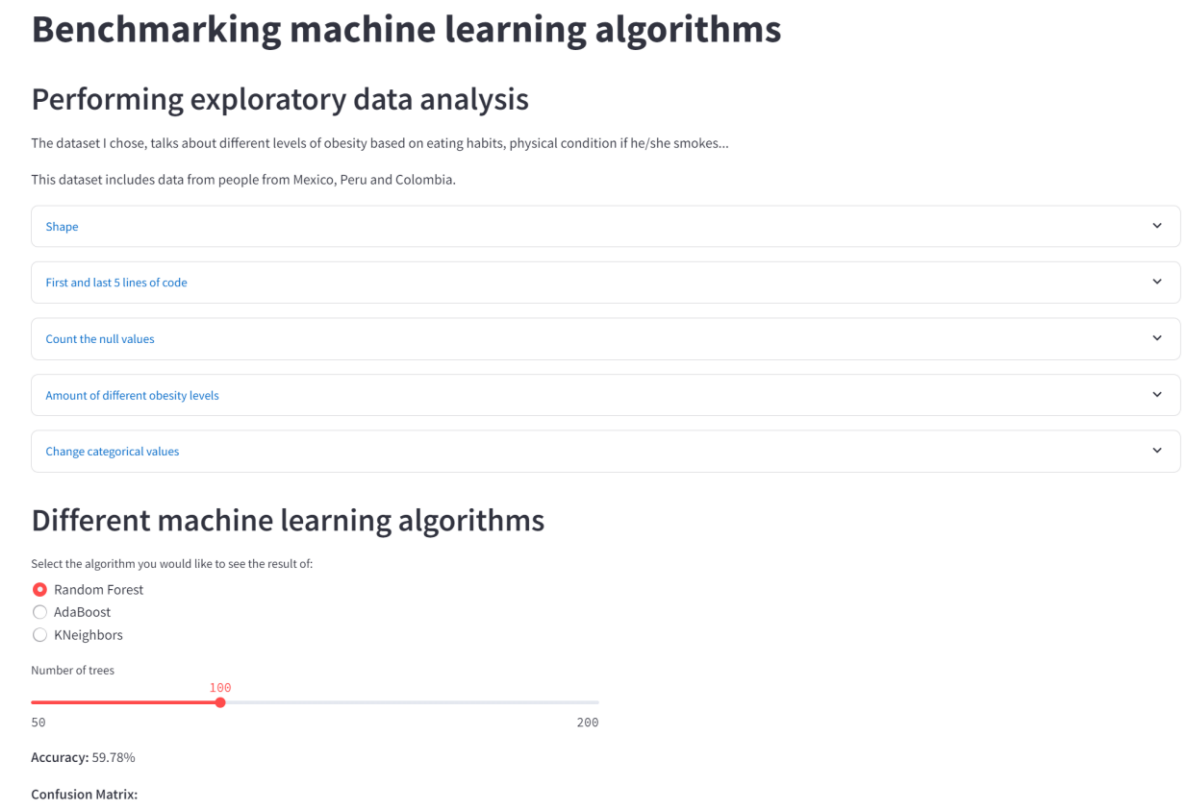
Cryptarithmetic puzzle solver:

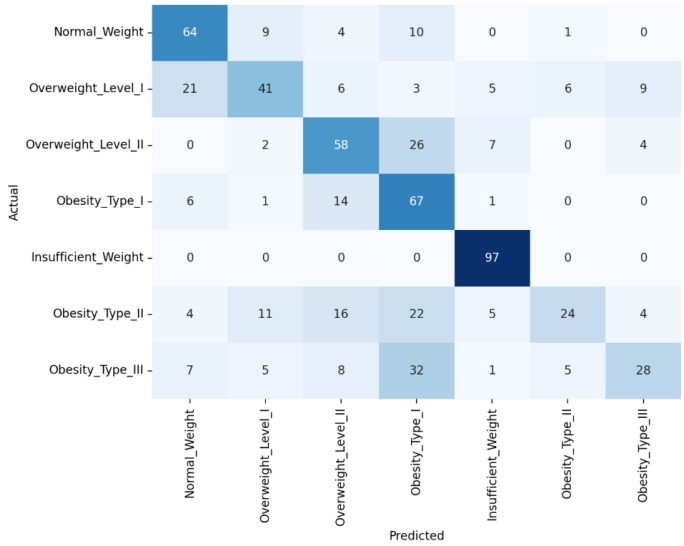


Machine learning:



Accuracy: 59.78%

Confusion Matrix:



Conclusion

To conclude we can see that in most cases AdaBoost is the worst algorithm and Random Forest is the best.

We can also see that none of these algorithms give a good result, maybe it is hard to classify this data.

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Deep learning:

Deploy

Performing exploratory data analysis

I wanted to work with the category: marine life. I chose to scrape images of dolphins, clownfish, starfish, jellyfish and sea turtles.

I didn't want to use categories that were too similar, so that's why I chose those.

It's also easy to find many more categories so, I can always add more that would fit the marine life category.

I will start by showing the EDA that I did and a few sample images.

# of training images

amphiprioninae class, Number of Images: 120

asteroidea class, Number of Images: 120

dolphin class, Number of Images: 120

jelly+fish class, Number of Images: 120

sea+turtle class, Number of Images: 120

# of testing images

amphiprioninae class, Number of Images: 30

asteroidea class, Number of Images: 30

dolphin class, Number of Images: 30

jelly+fish class, Number of Images: 30

sea+turtle class, Number of Images: 30

Example image of the training set

Example image of the test set

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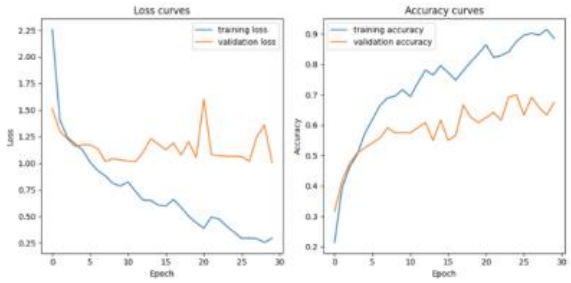
Showing the trained model

Visualize the training and test loss and accuracy:



Here, you can change the epoch to see the result.

Epoch

15

5 30

Accuracy: 66.67%

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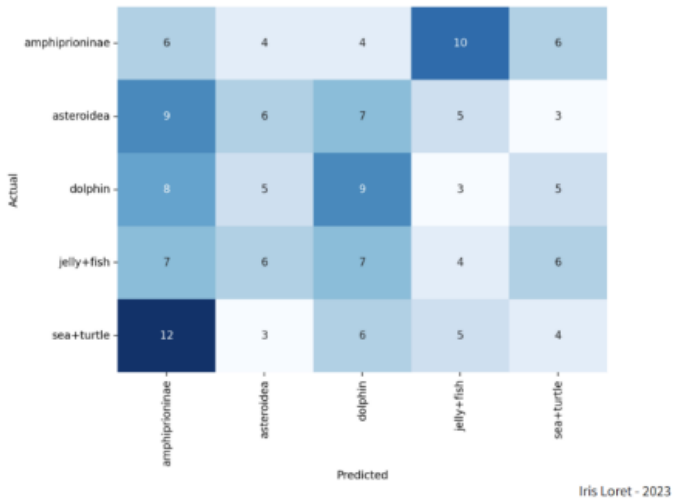
Test loss: `0.9883943796157837`

Confusion matrix



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