Shandon Fleming

CART 415

In Class Exercise

PART A: The construction of a model with only your data.

1. Please provide a description of the initial data set you brought to class. What were the

objects, how many … and why you chose those specific objects. Provide an image of

each distinct object.

I had five objects in my initial data set: a sharpener, some keys, a screwdriver, some lip balm, and a mannequin head (from Sarah). To put it simply, I settled on these specific objects by choosing random objects that I had at my disposal.
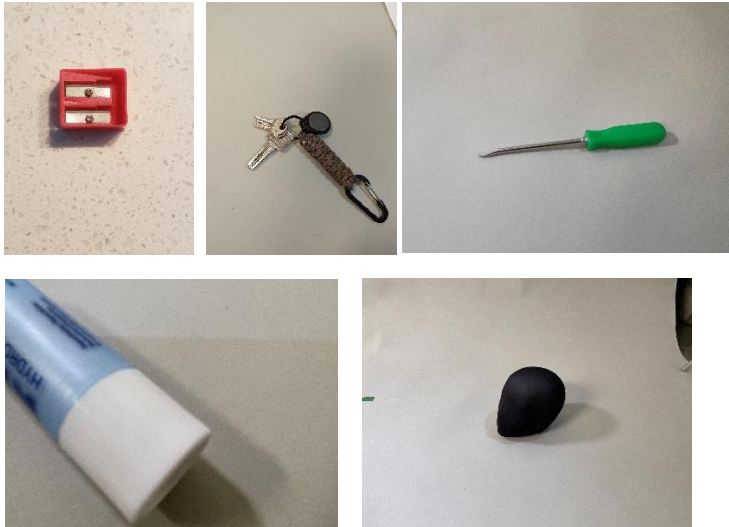
2. What was the purpose of the task you were asked to do in class?

The task we carried out in class was to ultimately create a detailed visual representation of the data that we uploaded to edge impulse which we can then draw data from.

3. Describe in a series of steps what you did to complete the initial task in class

To complete the initial task in class we simply followed the stages listed on the left hand side of the edge impulse UI starting from data acquisition and ending on the transfer learning page. The data acquisition page is where we uploaded our images for our data sets. On the "create impulse" page we selected our input axes and input features, both of which were set to "image". The "image" page is simply where we selected our image parameters, and the "transfer learning" page is where we can view the "trained" model of our uploaded data.

4. How well did your dataset do in terms of Accuracy, Precision and Recall?

My dataset was actually spot on in terms of precision and accuracy with an accuracy score of 100%.

5. Take screen grabs of the graphs available through the Feature Explorer for both the training and test/ live classification sets. Discuss the graphs in detail.
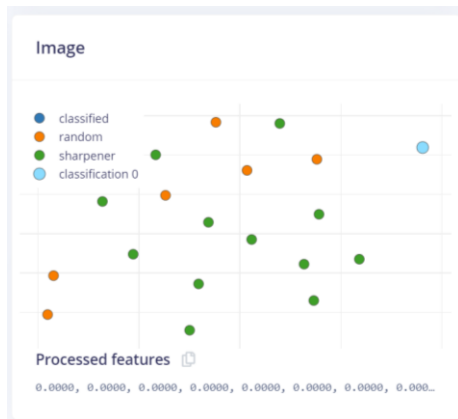
 live classification

 training classification

Both classifications are accurate in the fact that the "sharpener" is the most common "data" found which accurately reflects that I uploaded more "sharpener" photos than anything else. I do not quite understand how exactly the data points are organized or why they are positioned on the chart in the way that they are, but other than that, I can say that based on the images (data) that I uploaded to data acquisition page, the ratio of "sharpeners" to the other data is definitely accurate.

6. Provide brief postulations for how you think you could get your model to perform better. What does better mean?

One possible way that I think I could get my model to perform better is by tweaking the settings on the "transfer learning" page. I could increase the number of training cycles, the learning rate, and the validation set size to in turn get a more aggressive depiction of my uploaded data.

PART C : Think of how to integrate this task:

Provide a written scenario: (not necessarily useful nor functional) – meaning you can dream up

what you wish… without constraint... - for how and when such a task (Object Detection) could

**be used or embedded in … what, why, where, with whom.**

And provide a storyboard describing the scenario above as well

A scenario in which object detection can be used is in the evolution of airport immigration. For example, object detection can be used to allow for a smoother flow of travelers through security, gates, etc. if travelers are provided with a specific object (for example a color coded card) that will guide them through the airport to the gate specific to them.

-a traveler receives a card specific to his/her boarding pass
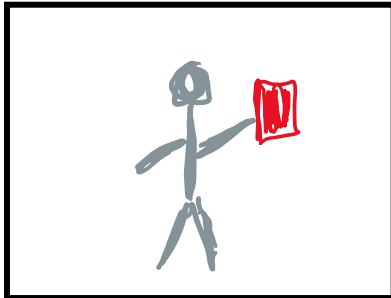
-the card is scanned as he/she passes through security
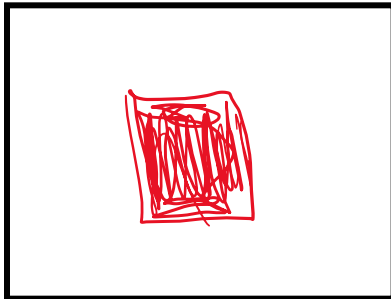
-based on the scanned card, the traveler receives directions specific to their end destination