Members: Alex Urbanski and Rachel Platt

Team Name: The Dirty Bits

**Taylor Swift Ex-Boyfriend Predictor (Name in Progress)**

1. Our goal was to come up with a project that could give you insight into which of Taylor Swift’s ex-boyfriends you are most similar to. I was excited to do this project because I really like Taylor Swift and Rachel was excited to do this project because she really likes the majority of Taylor Swift’s ex-boyfriends. This made us both very excited to work on this project because we could see both of our favorite things coming together into a single project. The way that we were planning on implementing classification was by building an image classifier. The idea was that we were going to get pictures of Taylor Swift’s ex-boyfriends and then train a neural network to classify the ex-boyfriends. We could then use this neural network that we trained to feed in a picture of anyone that we wanted and it would use classification to tell us which boyfriend the person in the picture looks most similar to. We would then implement regression by taking the new image and comparing it to a model of the most similar ex-boyfriend in order to develop some kind of score on how similar the faces are. We thought that this could be a good way to incorporate both regression and classification into one goal for the outcome of our project.

2. The data that we are using for the project is images of Taylor Swift’s ex-boyfriends. We are downloading images of the ex-boyfriends and putting them in separate folders to be used for training. After we download the images, we are resizing all of the images to be 500x500 pixels which can be a little large for training but we should have sufficient time to run the model. In terms of the number of images we are using, right now we have 20 images per ex. We may try to increase the number of images per ex-boyfriend but it can be hard to find good pictures for less famous ex-boyfriends, mainly Conor Kennedy. We already have collected the images we are going to initially try to train on and it should be known that we both have many folders of images ranging from Joe Jonas to Jake Gyllenhaal on our computers. We haven’t looked too much into the representation of the data in the actual program but we think that the images are traditionally represented as multi-dimensional arrays. So we would have an array that is 500x500x3 representing the 500x500 image and then the 3 RGB color channels.

3. In terms of modeling this data, we were not going to use Wekinator. The plan was to use python because it has a lot of packages like Scikit Learn or Tensor Flow that could be used to train a neural network. We were leaning towards using Tensor Flow to build up the neural network because neither of us have used it before and we thought that it would be a good opportunity to get to learn how it works. We looked into other face detection libraries, but decided it would be best to use an image classifier because face detection looks for faces that are the same, rather than levels of similarity. As mentioned before, we started collecting our data, but we are still in the process of learning how Tensor Flow works so we haven’t really started building our model yet. However, we plan to start writing the neural network code very soon. Then after the model is completed we were thinking about using Wekinator for the output. So when we run a new image through our model we would then send it to Wekinator with an OSC message. We could then use Wekinator to display your closest ex-boyfriend match and your score, this way our project can be interactive with an immediate display of the output.