

## **1. General Status**

We are fully on track to complete the project. We have working models for all of the datasets, along with a driver to run the model on any of them based on user input, and recordings of the relevant statistics. This marks completion of goals 1 through 5 of the 10 goals mentioned in the project proposal, including the ones we thought would likely be the hardest. More specifically, we have completed the following goals:

- Read the relevant literature
- Implement three ML models
- Collect metrics on the models' performance
- Implement the models for all datasets
- Isolate the results per dataset

The following goals remain:

- Use the SHAP library to explain the results of the models
- Retrain the models after removing the most important features
- Process the results
- Deploy the experiment in Occam
- Analyze the outputs and write a final report

We expect the first two of the remaining goals to be the most time consuming, while the last three should be straightforward.

## **2. Changes to Process**

The only relevant change to our planned process was to experiment with some “pair coding” activity, which resulted in the successful resolution of several bugs.

## **3. Reflection - What Went Well/Poorly?**

One pitfall that our group encountered was in migrating between local systems and Google Collab, which we used as an easy way to collaborate. Compatibility issues have hampered our ability to easily transfer code and results between platforms, and we currently have active parts of the project that are split between multiple platforms which are mutually incompatible. This is not at all an insurmountable problem, especially since the project is highly “modular,” but we will need to consolidate in order to reach step 9 (deploying our experiment in Occam), and as a part of that process, we will aim to reduce our reliance on outdated versions of packages so that others can easily get our code to run. Despite this drawback, Google Collab has been a great way to collaborate remotely, thereby drastically improving our productivity. Otherwise, we have faced no major problems.

#### **4. Major Risks**

The main risk that our project faces is the possibility that our proposed mechanism for audio privacy will turn out to be infeasible. We are relying on the assumption that removing some features from the audio data will allow us to eliminate the ability to predict certain types of information (i. e. gender) without completely garbling the data. However, if the features we are considering are somehow too influential to the information we want to preserve, or the information we are trying to eliminate can be gleaned in many other ways, then our experiment could return a negative result. While this may not constitute a complete failure of the project (a negative result is, after all, still useful, and would tell us a lot about the nature of the effects of gender and language on vocal frequencies), it would certainly be less interesting than a positive result.