**Random Forests + Gradient Boosting**

Zoom Recording:

<https://berkeley.zoom.us/rec/share/sw6ATKAGJtnA3P3l_alVhdv9ySRSIy79MJpLo-KPpBtBqELKw0vlvVdZcL8QKDGY.52nsCuLpayrxwkEN>

For this week, we explored a few minor improvements towards our linear model from last week, showing how we can use a different form from the linear model through logistic regression to predict categorical variables such as heart disease. We then introduced new techniques related to decision trees to build different models that could potentially do better with tweaking. Here are some general things for you to consider and try to answer on your own:

* Where do our scores come from? Understand this and how you would calculate it if you were forced to do it by hand.
* Why do we conduct Cross Validation?
* Make sure you are comfortable with how decision trees in general work. Feel free to look around online for other resources. Here is a link for a guide on the random forest model we used: [Random Forest Classifier](https://scikit-learn.org/stable/modules/generated/sklearn.ensemble.RandomForestClassifier.html).

When it comes to building off of this week’s content, there are a few different approaches you can do this with in varying degrees of difficulty.

* You can try and tinker around by dropping more variables from the classifier to see if you can achieve a better accuracy, or tweak various hyperparameters in the model itself based on the documentation links above.
* Most of what has been done this week is on classification. If you want to tweak models for the regressors that relate to predicting quantitative data, you might want to take a look at these links too: [Linear Regression](https://scikit-learn.org/stable/modules/generated/sklearn.linear_model.LinearRegression.html), [Random Forest Regressor](http://scikit-learn.org/stable/modules/generated/sklearn.ensemble.RandomForestRegressor.html)
* Try creating models in the heart failure dataset. Can you tune one that can predict heart failure with a high accuracy?

We will be finishing up on introducing new models next week, and you will have time to go back on these few weeks to try out different things you might be interested in.