Project Spec Requirements:

1. Anaconda
2. Overleaf
3. Trello
4. Github: <https://github.com/Jds95/CSC-742-Evolutionary-Algorithms>

To do list:

1. Move dataset to Github
2. Move ML code to Github
3. Jesse -> Unsupervised Learning algorithms + EA
4. Rafail -> Decision Trees/Random Forest + EA
5. ------------------- Steps 1-4 completed by 11/15/19
6. ??? -> … Visualization? Showing time data ect
7. Paper/Presentation -> Each person responsible for their own work to translate into the paper/presentation
8. Editing --
9. Coding
   1. Machine Learning Algorithms
      1. Clustering
         1. Spectral
            1. <https://scikit-learn.org/stable/modules/generated/sklearn.cluster.SpectralClustering.html>
         2. Agglomerative
            1. <https://scikit-learn.org/stable/modules/generated/sklearn.cluster.AgglomerativeClustering.html>
         3. Affinity Propagation
            1. <https://scikit-learn.org/stable/modules/generated/sklearn.cluster.AffinityPropagation.html>
      2. Decision Trees
         1. <https://scikit-learn.org/stable/modules/generated/sklearn.tree.DecisionTreeClassifier.html>
      3. Random Forests
         1. <https://scikit-learn.org/stable/modules/generated/sklearn.ensemble.RandomForestClassifier.html>
   2. Evolutionary Algorithm Implementation
      1. Genes -> Hyperparameters
      2. Parent Selection -> Tournament/Roulette
      3. Cross over -> 1 point/2 point/uniform on same ML algorithm gene
      4. Mutation -> Applied slight variance to original (original + mutation\_size)
      5. Survivor Selection -> Child + Population // Replace worst
   3. Results
      1. Accuracy, F1-Score, Recall -> DT / RF
      2. Visualize results -> Labels inside the clusters
      3. Time Results
10. Paper
    1. Overleaf
    2. Excel to LaTeX tools
    3. IEEE
11. Presentation
    1. 22-25 Minutes Talking
    2. Questions and Answers