**Final Project**

You have to write a paper (6 to 8 pages) about your project.

**Choose a dataset from**

UC Irvine Machine Learning Repository (<https://archive.ics.uci.edu/ml/index.php>)

with at least 5000 instances and 20 attributes for classification or regression.

**Compare** how the different approaches seen in class perform on this dataset to

**Predict** accurately the classes or the values of the unlabeled data.

**Determine** what are the best hyper-parameters for each approach you are using.

-we need to split our dataset 75% of the data for training and 25% of the data for testing

**Linear Regression Single Variable**

-We want to minimize the error between our points and a line of best fit.

**Cross Validation**

-Rotate the 25% testing data through the data set, record the results for how well each method does and compare the results to each other. Since, we divided the data into 4 blocks, this is called Four-Fold Cross Validation.

**Python libraries**

-pip

-pandas

-Matplotlib Plotting

-sklearn

**Presentation**

You have to include a presentation of the research questions and the chosen methods to tackle them, Relevant Literature Review, a presentation of the results and discussion and a conclusion/future work.

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**Abstract**

-to correctly predicate ?

Regression and classification are two fundamental tasks in machine learning. Regression intends to predict a continuous output variable, while classification intends to assign a categorical label to a data instance. Various algorithms will be discussed throughout including regression and classification algorithms, linear regression, logistic regression, decision trees, random forests, and support vector machines. Using these algorithms to compare the different approaches seen in class on this dataset to accurately predict the classes or the values of the unlabeled/training data.

Determine what are the best hyper-parameters for each approach you are using.

We will also cover topics such as model evaluation, feature selection, and regularization. By the end of this course, students will have a strong understanding of the principles and techniques used in regression and classification, and they will be able to apply these methods to real-world problems.

**General overview**

**Dataset Strategies**

-add headers

-add parsing

-add formatting

**Motivation**

**Relevant Literature Review**

**Experimental setup and methodology**

**Discussion of findings**

**Concluding remarks**

**References**

**Appendix**