

## ***Dataset***

Public Energy  
Disclosure Dataset:  
Building and  
Construction  
Authority, Singapore



# of buildings:  
Hotel: 300  
Retail: 175

## ***Filter***

Using Building attributes:  
Building type, AC type,  
Gross Floor Area,  
Energy Use Intensity



# of buildings:  
Hotel: 205  
Retail: 116

## ***Analysis***

Descriptive statistics  
and information on  
energy usage to create  
predictors for model



Min, Max, Mean,  
Standard Deviation  
and Z-score

## ***Model***

Ensemble Tree:  
Tuning,  
Prediction,  
Evaluation



MinLeafSize  
and LearnRate,  
Energy Consumption,  
sMAPE

## ***Benchmark***

Model prediction to grade buildings  
5 letter grading system- A to E  
Relative scale among building type



## ***Explanation***

Partial Dependence Plot  
Shapley value  
Comparison with existing benchmark

