

A  
PROJECT IN DATA SCIENCE

# Guided Capstone Project

BY  
GANESH BHANDARI

SPRINGBOARD  
JANUARY 2011

## Objective:

- To provide some guidance to the Big Mountain Resort on how to select a better value for ticket price based on its facilities so that the resort can increase its revenue.

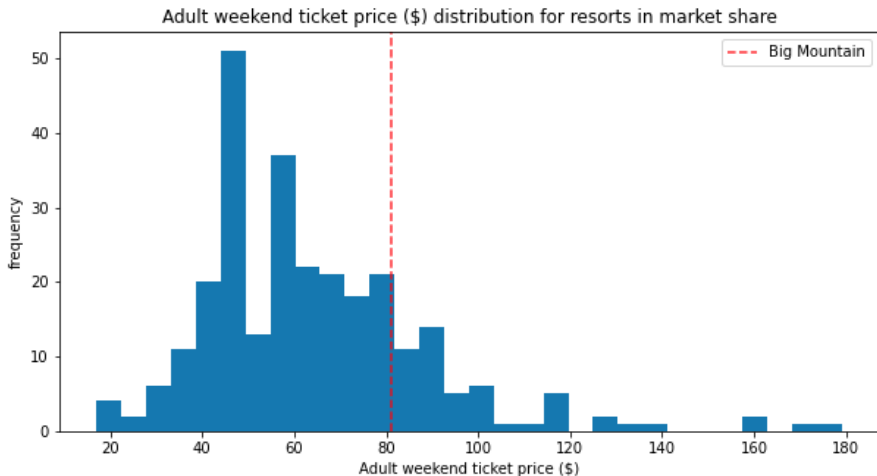
## Problem Background

- Ski resort located in Montana and offering spectacular views of Glacier National Park and Flathead National Forest with access to 105 trails.
- Every year about 350,000 people ski or snowboard at Big Mountain.
- The Resort has been charged a premium above the average price of resorts in its market segment.

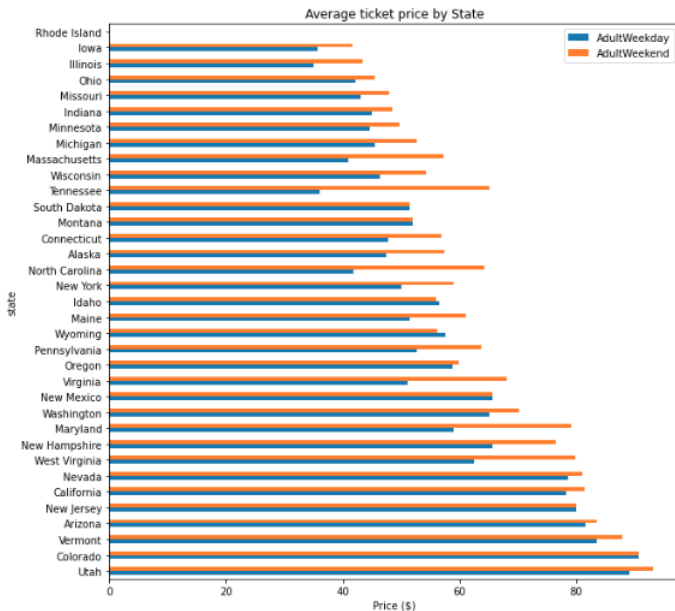
## Current Situation:

- The Big Mountain Resort is currently charging \$ 81 per ticket.
- Very high price in comparison with whole United states average price of \$ 64 and Montana State average price of \$ 52.

## Current Situation:



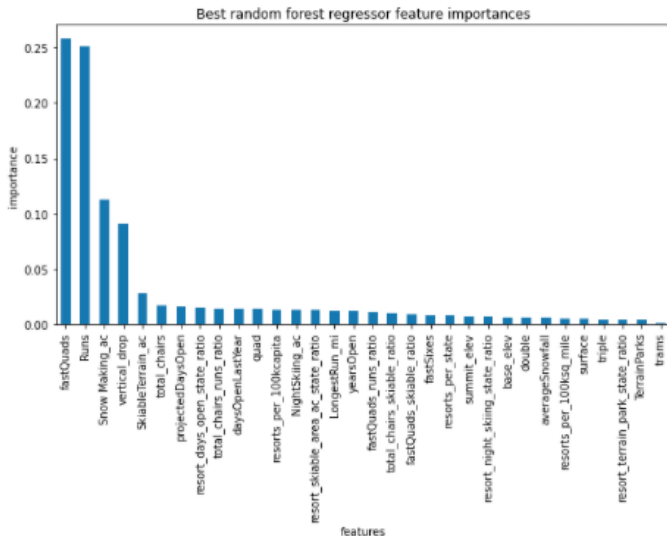
# Current Situation:



## Model:

- Used the RandomForestRegressor of sklearn inside the pipeline.
- Used cross-validation method to pick the best number  $k$  of features.
- Found  $k = 17$  as the best number of features.

# Model:





## Findings and Recommendations:

- The Big Mountain Resort is currently charging \$ 81 per ticket.
- According to the model, the modeled ticket price at the Big Mountain Resort should be \$ 95.87.

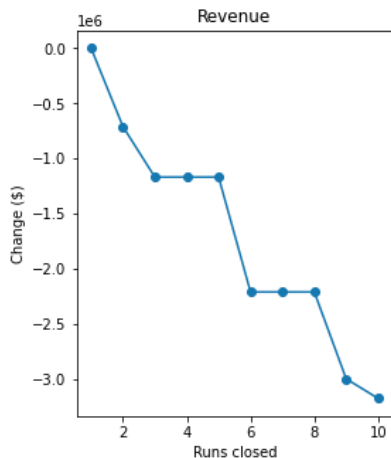
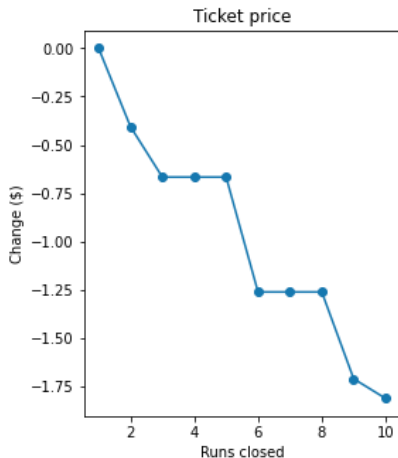
## Findings and Recommendations:

- **Scenario 1:** In the first scenario, if Big Mountain is adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift then the revenue can be expected to increase by the amount \$ 3474638 with the increase of ticket price by \$ 1.99.
- **Scenario 2:** In the second scenario, if Big Mountain is repeating the same previous facilities with the addition of 2 acres of snow making then the revenue can be expected to increase again by the amount \$ 3474638 with the increase of ticket price by \$ 1.99.

## Findings and Recommendations:

- The model says closing one run makes no difference. Closing 2 and 3 successively reduces support for ticket price and so revenue.
- If Big Mountain closes down 3 runs, it seems they may as well close down 4 or 5 as theres no further loss in ticket price.
- Increasing the closures down to 6 or more leads to a large drop.

# Findings and Recommendations:



## Conclusion:

- The validity of the model lies in the assumption that other resorts accurately set their prices.
- The level of data profiling should be checked.
- One should check if there are some features which can be added to the data to make the data rich and more reasonable to predict the price.

# THANK YOU!!!