

# Guided Capstone Project Report

## Findings:

Our proposed model offers the predicted price of Big Mountain Resort is \$95.87, which is more than the current actual price of \$81.00. Also, the expected mean absolute error of \$10.39 suggests that there is a possibility to offer more ticket price than the predicted one.

The validity of the model lies in the assumption that other resorts accurately set their prices according to what the market supports. By comparing the features with other resorts, it seems Big Mountain Resort is currently undercharging despite having comparatively great features.

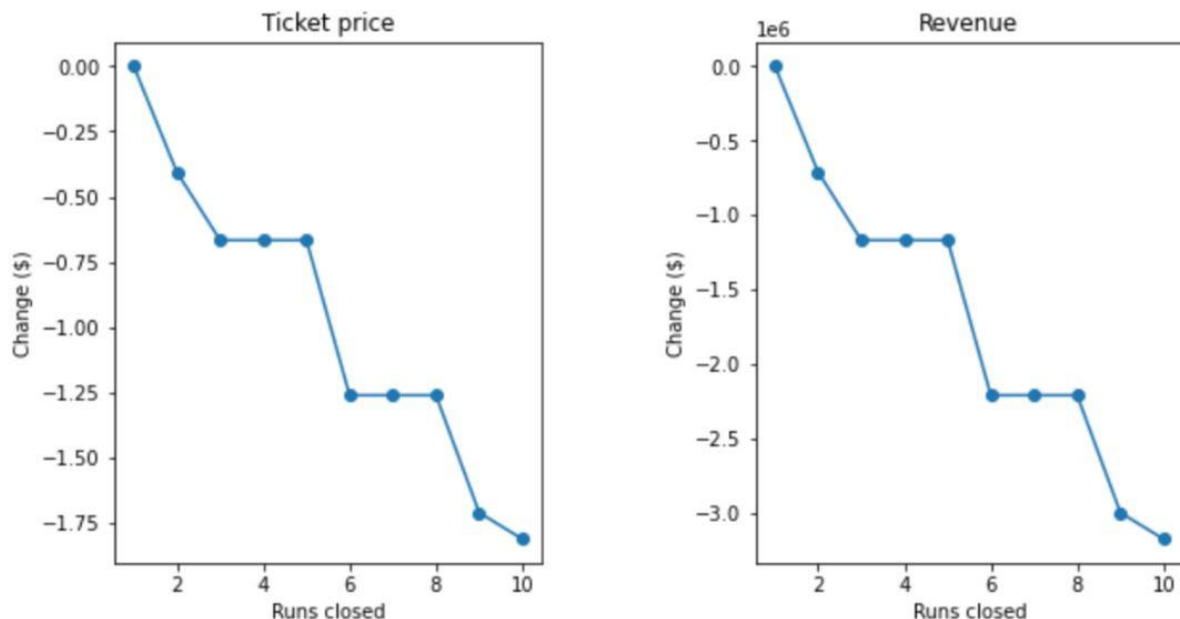
When analyzing relative features with other resorts, I have found Big Mountain Resort have some important features and they are vertical\_drop, Snow Making\_ac, total\_chairs, fastQuads, Runs, LongestRun\_mi, trams, SkiableTerrain\_ac respectively.

## Modeling scenarios:

By analyzing the relative features the business has shortlisted some options:

### Scenario 1

Permanently closing down up to 10 of the least used runs. This doesn't impact any other resort statistics.



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 there's no further loss in ticket price. Increasing the closures down to 6 or more leads to a large drop.

### Scenario 2

In this scenario, Big Mountain is adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift. This scenario increases support for ticket price by \$1.99 over the season, this could be expected to amount to \$3474638

### Scenario 3

In this scenario, we are repeating the previous one but adding 2 acres of snow making. This scenario increases support for ticket price by \$1.99 over the season, this could be expected to amount to \$3474638 Such a small increase in the snow making area makes no difference!

### Scenario 4

This scenario calls for increasing the longest run by .2 miles and guaranteeing its snow coverage by adding 4 acres of snow making capability. No difference whatsoever. Although the longest run feature was used in the linear model, the random forest model (the one we chose because of its better performance) only has longest runway down in the feature importance list.

### Conclusion:

Despite having some missing and incorrect values in the dataset, we have successfully predicted the ticket price for Big Mountain Resort by analyzing and modeling all the relative features. The new price will gain the profitability and business value for the resort.