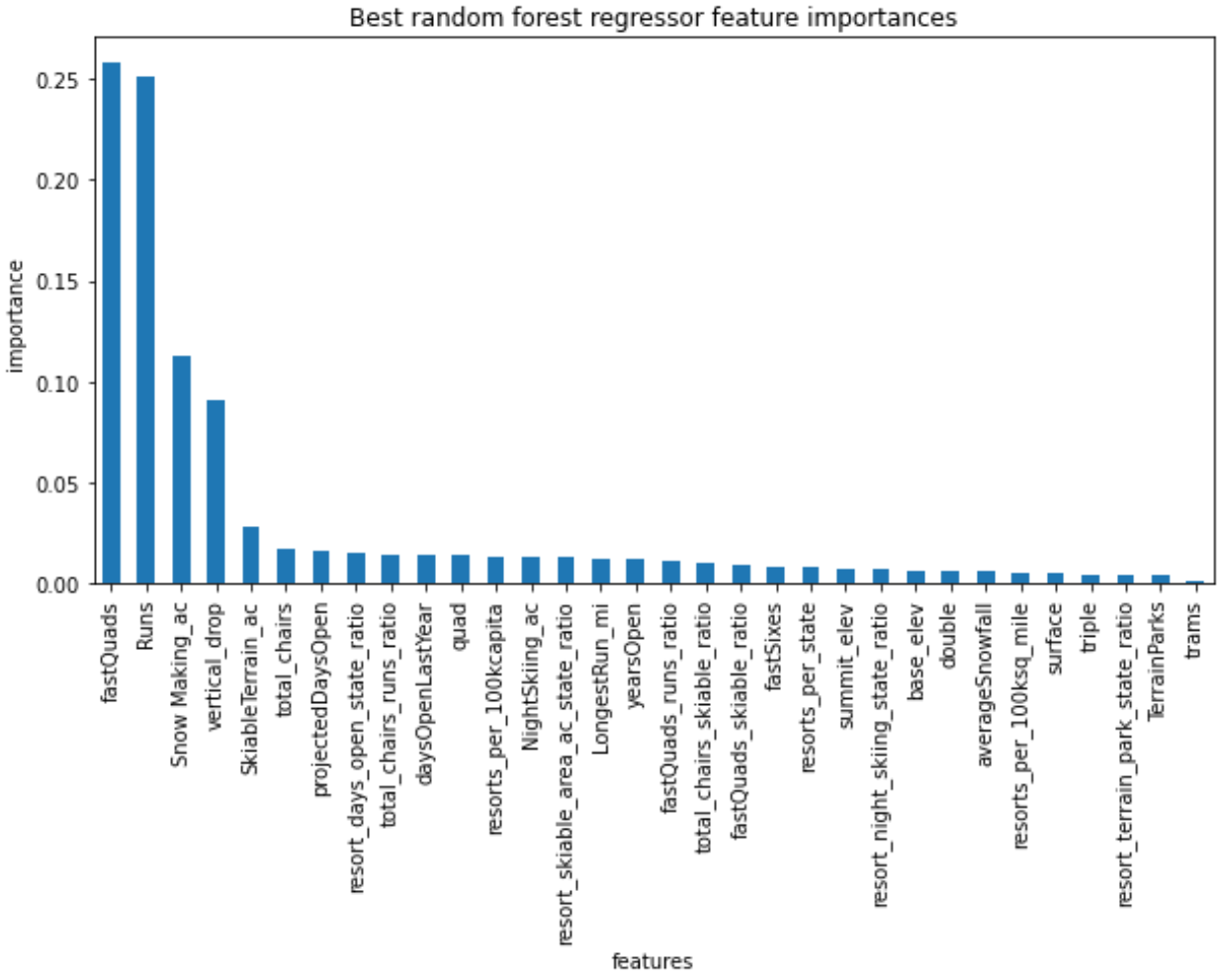
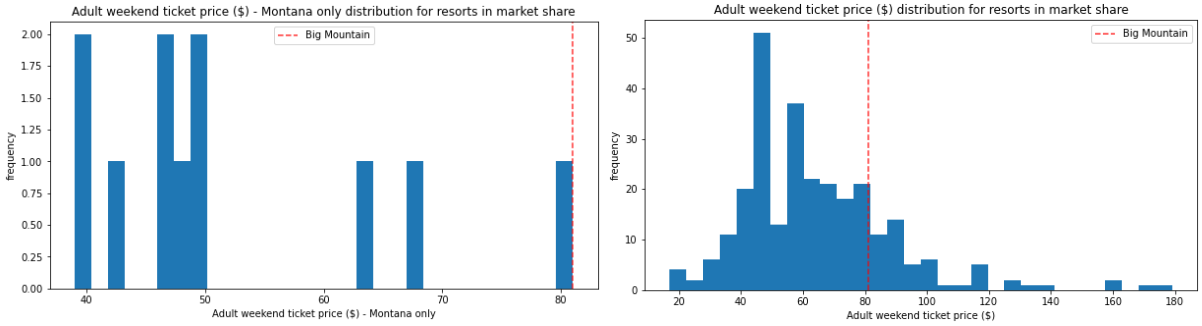
The Big Mountain Resort is located in Montana with spectacular views of Glacier National Park and Flathead National Forest. Established 72 years ago, Big Mountain has national advanced skiing facilities which can accommodate 350,000 skiers and riders of all levels and abilities every year. This report is a summary of recommendations for Big Mountain's pricing strategy based on our price modeling.

We chose Random Forest Model, as it performed better on our set of data than the Liner Model.



According to the model, the dominant top four features that affect the price are the number of fast quads, the number of runs, snow-making acres and vertical drop distance, this result is the same with the Linear Model.

We refitted the model on our data set and calculated the expected Big Mountain ticket price from the model, the result shows, Big Mountain Resort's modeled price is $95.87, the actual price is $81.00. Even with the expected mean absolute error of $10.39, this suggests there is room for an increase.



We used histograms to visualize adult weekend ticket prices in the range of inside Montana state and nationwide. The result show, with the current price of $81, Big Mountain charged a premium above the average price of resorts in its market segment. At the same time, the visualization for the main features that affect the price also shows Big Mountain's facilities are at the forefront of the country. Combined with the price from the model, we are confident to say Big Mountain's price is worth its facilities and still has room to increase.

Regarding the 4 scenarios proposed by Big Mountain, our model suggests 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 a $3474638 increase in revenue. Adding 2 acres of snow on top of this will not affect on ticket prices. In contrast, closing one more runs will reduce support for ticket prices and so revenue. Whereas, increasing the longest run by 0.2 miles and guaranteeing its snow coverage by adding 4 acres of snow-making capability makes no difference in the ticket price.

Given the limited data provided, there are two main deficiencies in this model. One is the lack of operating cost which made us impossible to calculate the profit. The other is that we don't have data on the number of visitors, so the model is under the assumption that all other resorts are largely setting prices based on how much people value certain facilities. As a result, we calculated the revenue based on the given expected number of visitors even though we knew that price changes can affect the number of visitors.

In summary, given Big Mountain’s existing facilities, raising ticket prices is imperative. Big Mountain deserves a higher ticket price and needs to cover the increased operating cost. If big mountain wants to invest in new facilities, we suggest closing one mediocre run and building a run with a higher vertical distance, this can add up to a good amount of revenue.