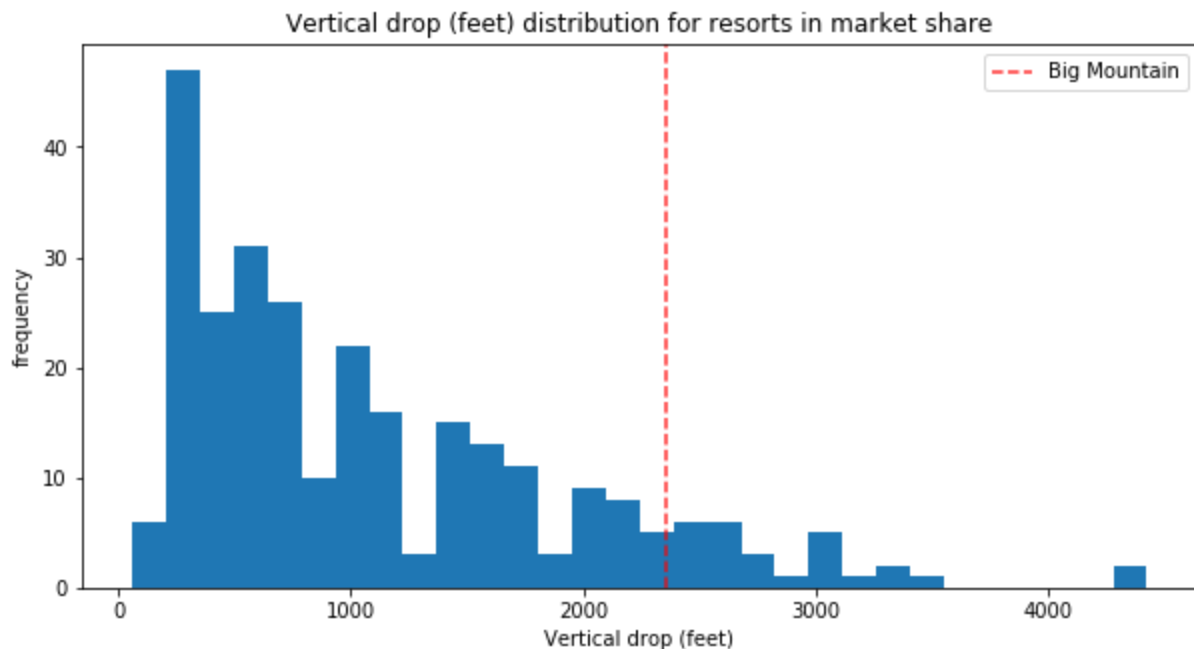


Guided Capstone Project Report

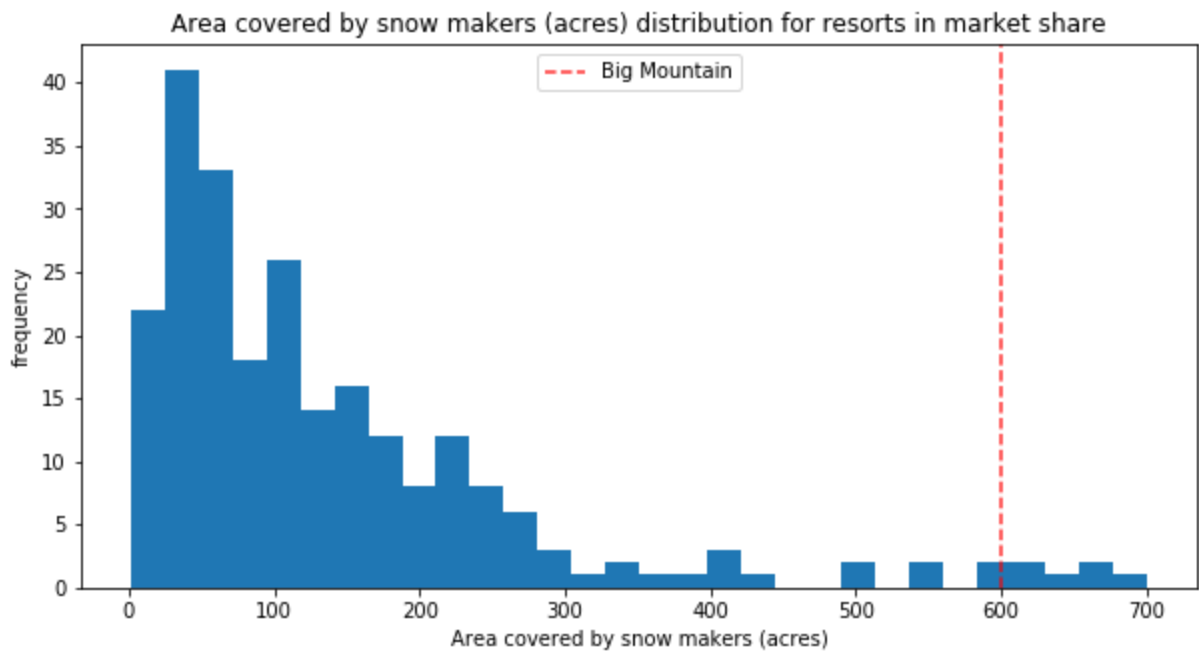
BIG MOUNTAIN RESORT IN MARKET CONTEXT

Our chosen model (Random Forest Regressor) predicted Big Mountain's ticket price to be 94.22 dollars, actual price is 81.00 dollars. The most important offerings that are tied to ticket price were compared against competitors in the market place and Big Mountain by plotting the distributions and highlighting Big Mountain. Big Mountain had offerings that were considerably higher than the average and near the top of the distributions for:

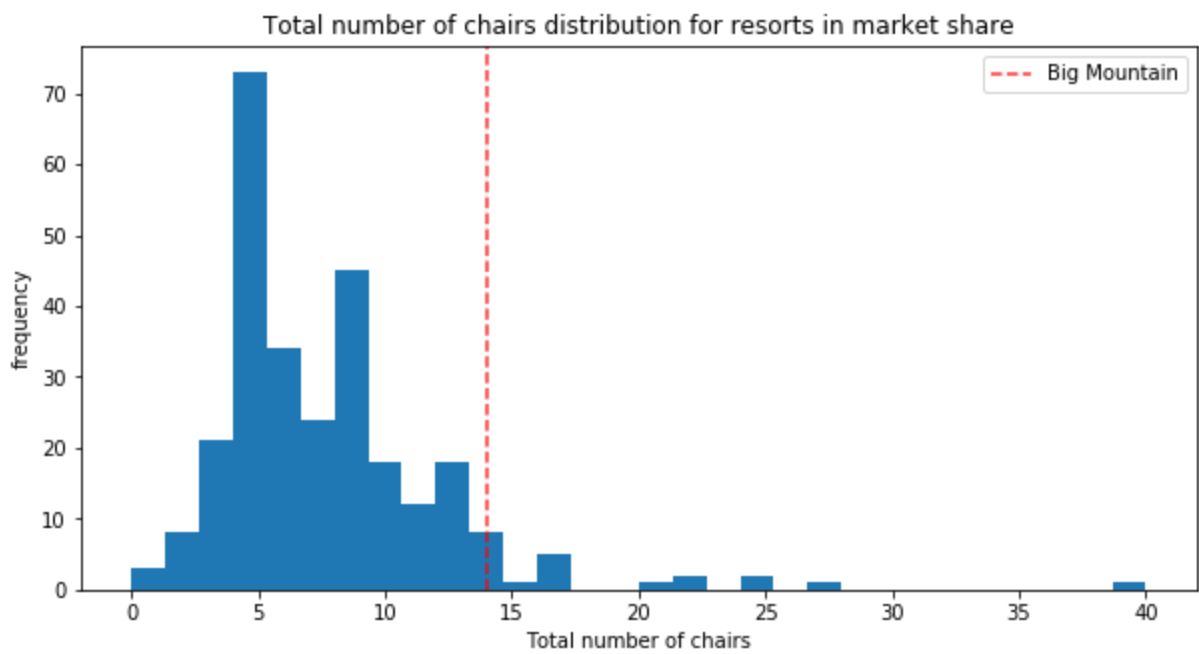
- vertical_drop - there is some room for improvement here, even though the drop is still considerably higher than average, all other offerings by big Mountain are comparably more competitive.



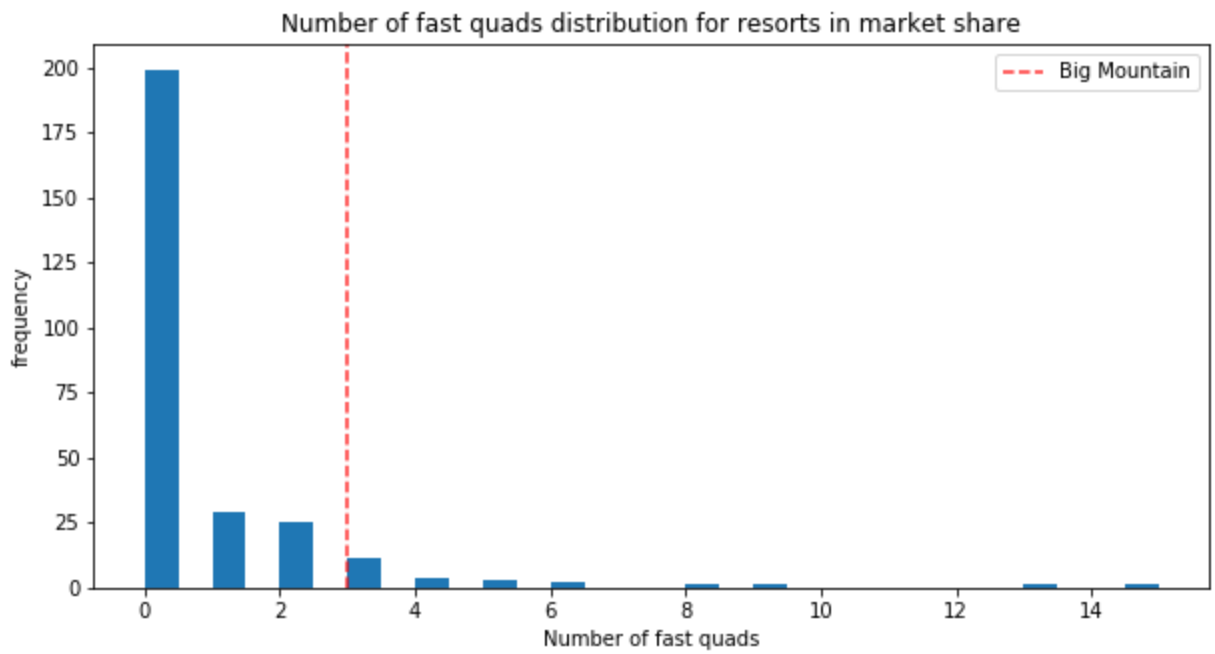
- Snow Making_ac



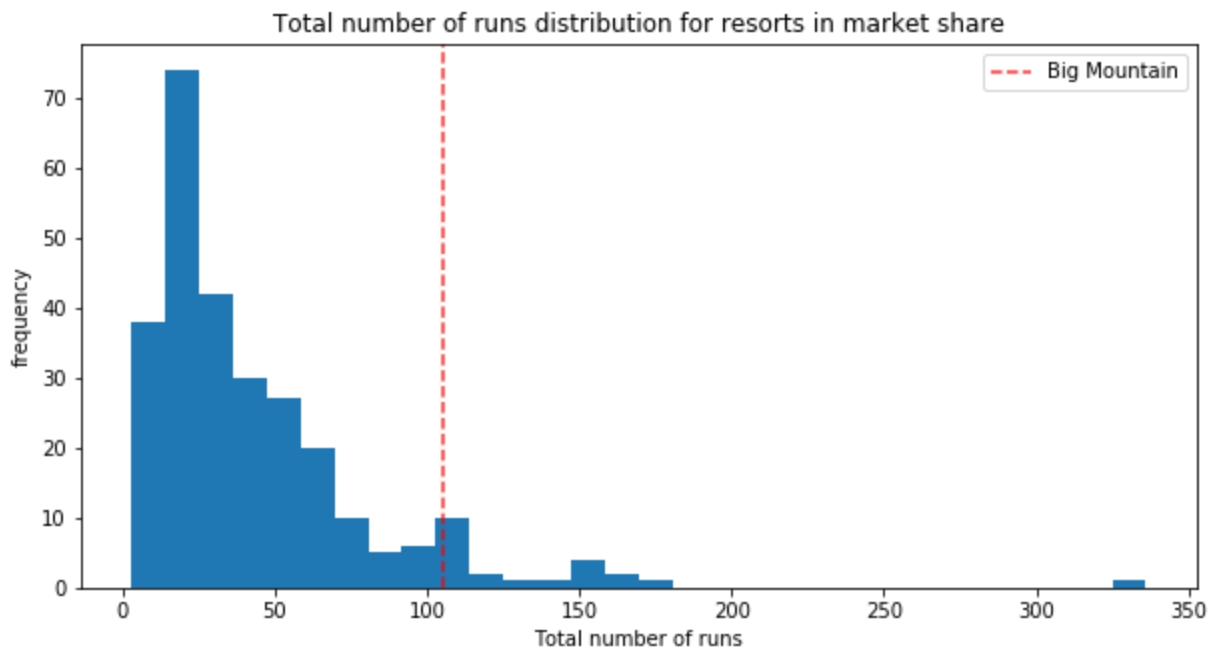
- total_chairs



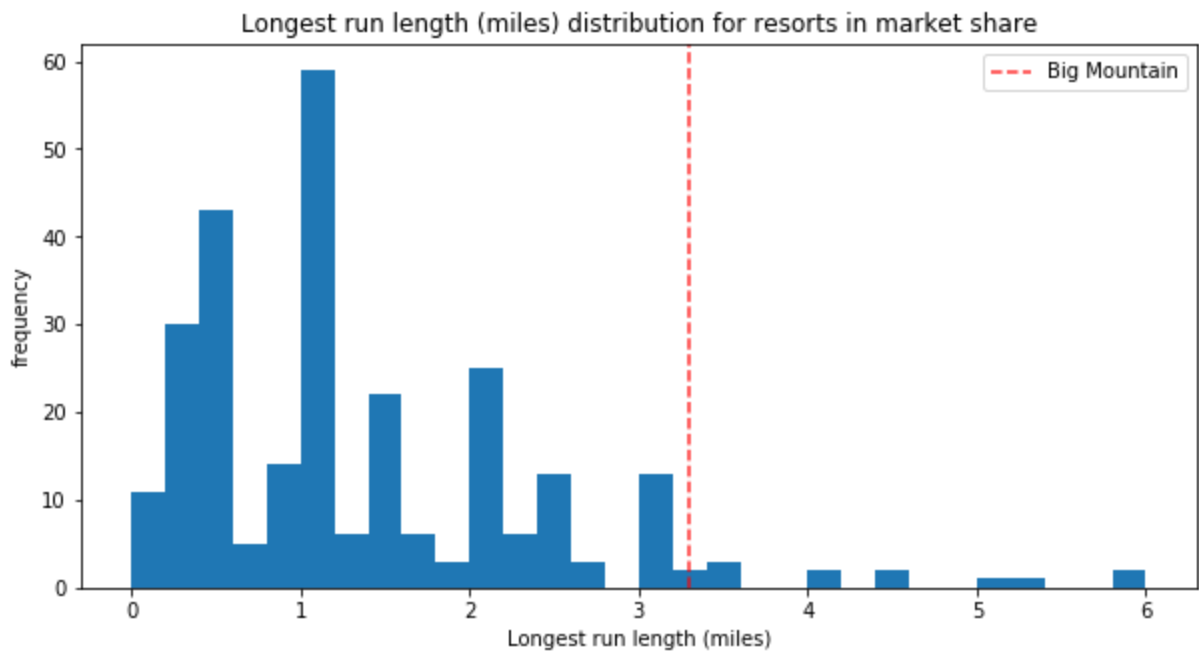
- fastQuads



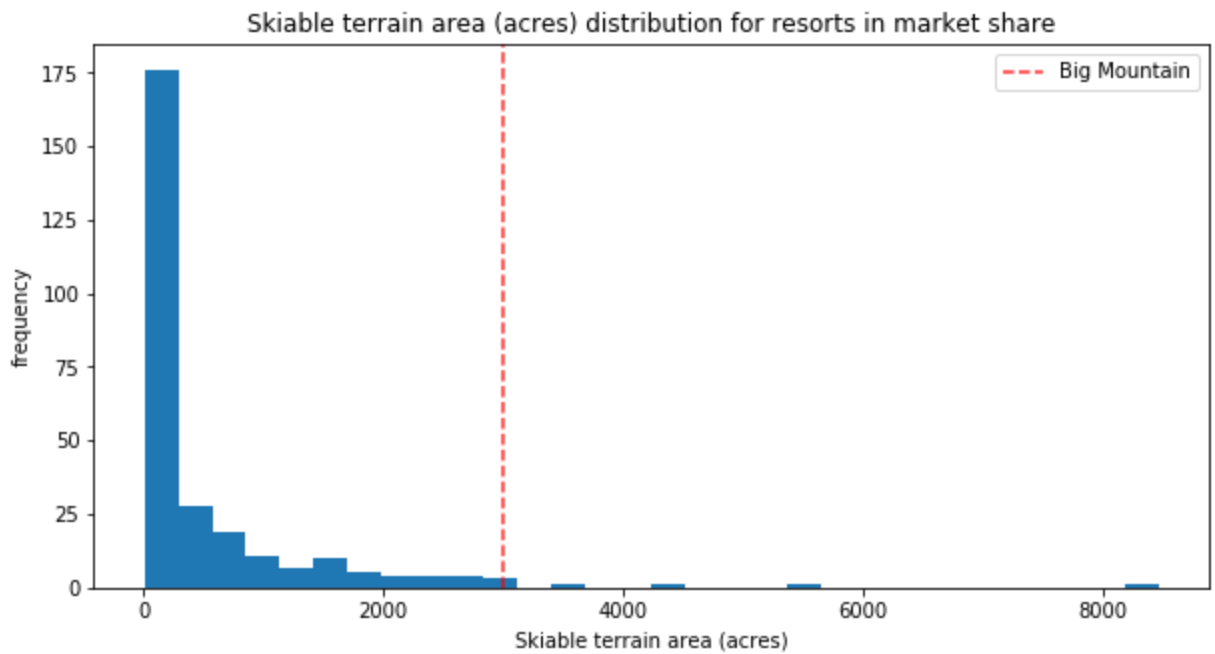
- Runs



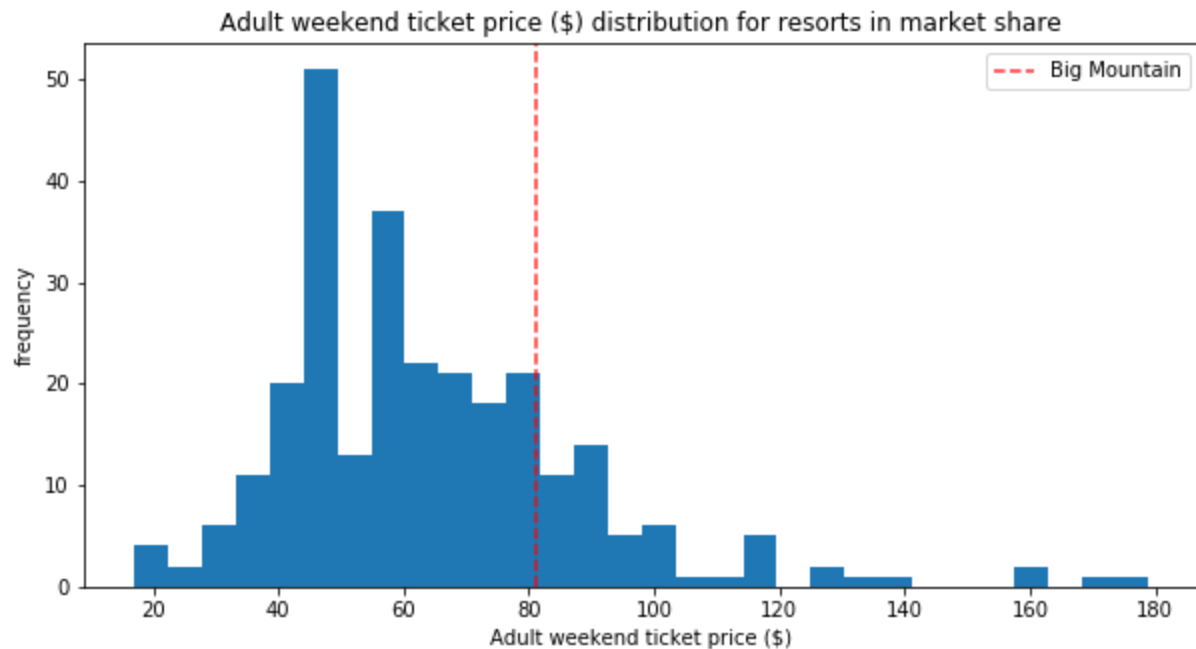
- LongestRun_mi



- SkiableTerrain_ac



The distribution of market ticket prices which was also plotted highlighting big mountain shows an opportunity for increasing the price, especially considering the value that Big Mountain is offering in terms of these features compared to other resorts and what the other resorts are charging.

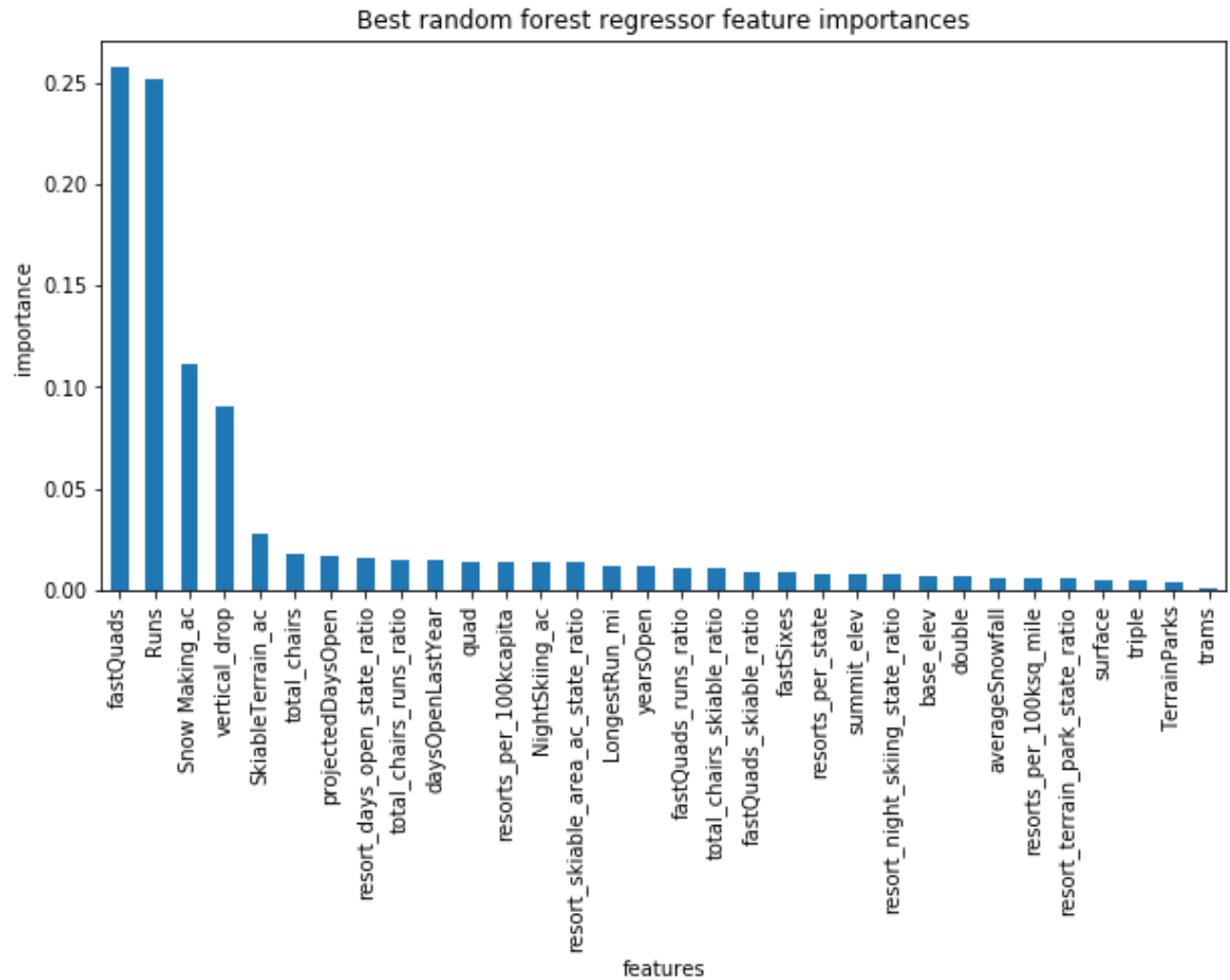


SCENARIO SELECTION

Scenario two, where Big Mountain adds a run, increases the vertical drop by 150 feet, and installs an additional chair lift seems to make sense, the vertical lift was shown to be the feature with the most weight in our linear regression model (not used but useful for interpreting feature importance) and also placed very highly for feature importance in our chosen random forest model, runs and total chairs are also shown to place highly on feature importance rankings:

LINEAR REGRESSION

vertical_drop	10.767857
Snow Making_ac	6.290074
total_chairs	5.794156
fastQuads	5.745626
Runs	5.370555
LongestRun_mi	0.181814
trams	-4.142024
SkiableTerrain_ac	-5.249780



Assuming visitors on average buy 5 day tickets, the data shows that this scenario increases support for ticket price by \$1.99, over the season this could be expected to amount to \$3474638 which could potentially cover the additional engineering and operational costs (we know the chair lift is \$1,540,000). For the other scenarios: adding 2 acres of snow makes no improvement, increasing the longest run by 0.2 miles shows no improvement.

CLOSING RUNS

Finally, the model shows closing one run makes no difference. Closing 2 and 3 successively reduces support for ticket price. If Big Mountain closes down 3 runs, it 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.

