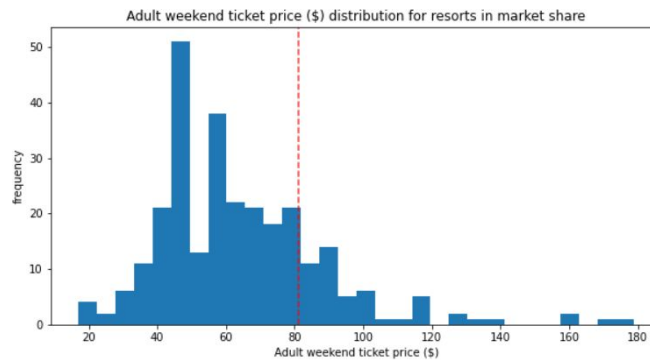
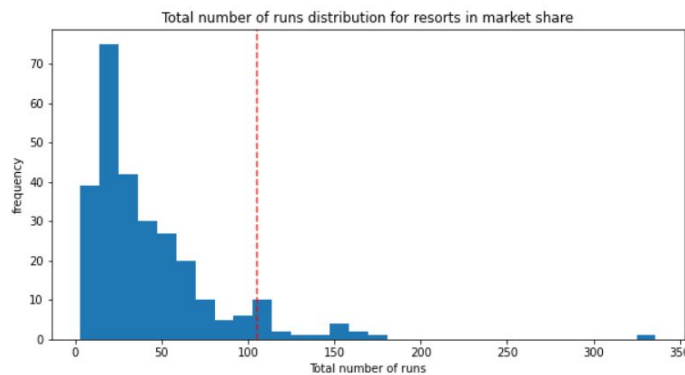


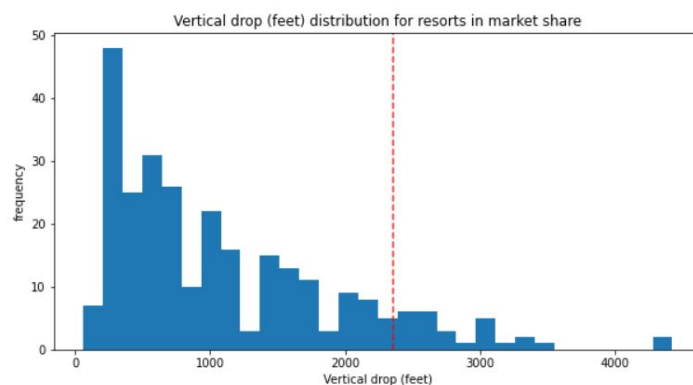
A model was trained on the attributes of ski resorts across the country to predict their ticket prices. A grid search showed that the most important features in the model were the number of runs, the distance between the peak and the base of the mountain, the number of fast four-person ski-lifts, and the amount of man-made snow. The distribution of ticket prices for the resorts in market share are displayed below, and Big Mountain Resort is on the more expensive end of the spectrum



Big Mountain compares well for the number of runs. There are some resorts with more, but not many.



It's also certainly quite sizeable comparatively to others, although there are plenty of bigger resorts, shown below.



A Random Forest Regressor had a mean absolute error of 9.123, which is a significant improvement from the mean model that had a mean absolute error of 18.049. The model predicts that Big Mountain Resort would charge \$89.93 when it actually only charges \$81.00

Despite the mean absolute error of 9.123, a difference this large suggests that the resort could increase their ticket price, as they certainly have a lot to offer in important respects in comparison to resorts in market share.

Regarding the various scenarios the resort is considering undergoing in order to either cut costs or increase revenue, a few options stand out as ideal. If they are considering closing the least used chair lifts, closing up to 6 wouldn't affect ticket price significantly but closing anymore would cut into profits. If the resort added and run, 150 feet in vertical drop, and another chair lift, the ticket price increases by \$1.28, and the same goes if they were to increase snow-making as well. Lastly, increasing the longest run by .2 miles as well as the snow making capacity to cover the added ground doesn't change the ticket price at all. It would be my recommendation to add a run, 150 feet in vertical drop, and another chair lift while also taking down their 5 least used chairs.