Guided Capstone Project Report

# Background

Big Mountain Resort in Montana is looking for a better ticket strategy that capitalizes its facilities. The resort has currently been charging a premium above average. They are trying to find a more data-driven pricing strategy to maximize the revenue. They are also considering installing an additional chair lift, which is bringing extra operating cost this season. Is there a better model for them to refer to set up their price to make more profit?

# Model Overview

Chart, histogram

Description automatically generatedBased on our EDA work, we came to our best performed random forest model. We believed that different features had effects on the ticket price with different magnitude. However, we found out that there were four features had dominant influence. There are fastQuads, Runs, Snow Making\_ac and vertical\_drop, as shown in the figure below.

Based on the model, we came to a modelled price for Big Mountain Resort of $95.87, with the expected mean absolute error of $10.39. The current price for Big Mountain Resort is $81.00, which suggests room for increase.

# Scenario recommendation

After checking the price increase and revenue increase associated with different scenarios, we recommend to increase the vertical drop by adding a run to a point 150 feet lower down, at the same time install an additional chair lift without extra snow making coverage. By doing so, we are expecting an increase per ticket by $1.99. that will make the price per adult $82.99. Supposing 350000 visitors for this season, we are expecting $3474638 increasing in revenue.

# More usage of the model

Our model is also available for testing different scenarios. It will return the differences between the modelled ticket price with and the current price, and calculate the expecting profit change supposing 350000 visitors in this season.