Problem Identification

- How can the different facilities at Big Mountain resort be quantified into value and desirability within the greater context of all competing resorts?

- How can this identification be leveraged to increase net profitability by 10% over the course of two ski seasons?

Recommendations & Key Findings

- Increase ticket price from $81 to $95
  - Profit increase of $24.5 million over one season

- Add one run that increases vertical drop
  - Increase profit by ~$3.5 million over one season

- Shutdown least used chair lifts.
  - One chairlift shutdown would not require a reduction in ticket price
  - Up to 5 chairlifts could be shutdown with minimal impact to market-supported ticket price

- Key facilities of high value:
  - total number of runs
  - vertical drop
 - number of fast Quad lifts
  - area of snow-making ability

Modeling Results & Analysis:
Exploratory Data Analysis

- No significant correlation between ticket price and location based on state.

- Key features associated with ticket price:
  - total number of runs
  - vertical drop
  - number of fast Quad lifts
 - area of snow-making ability
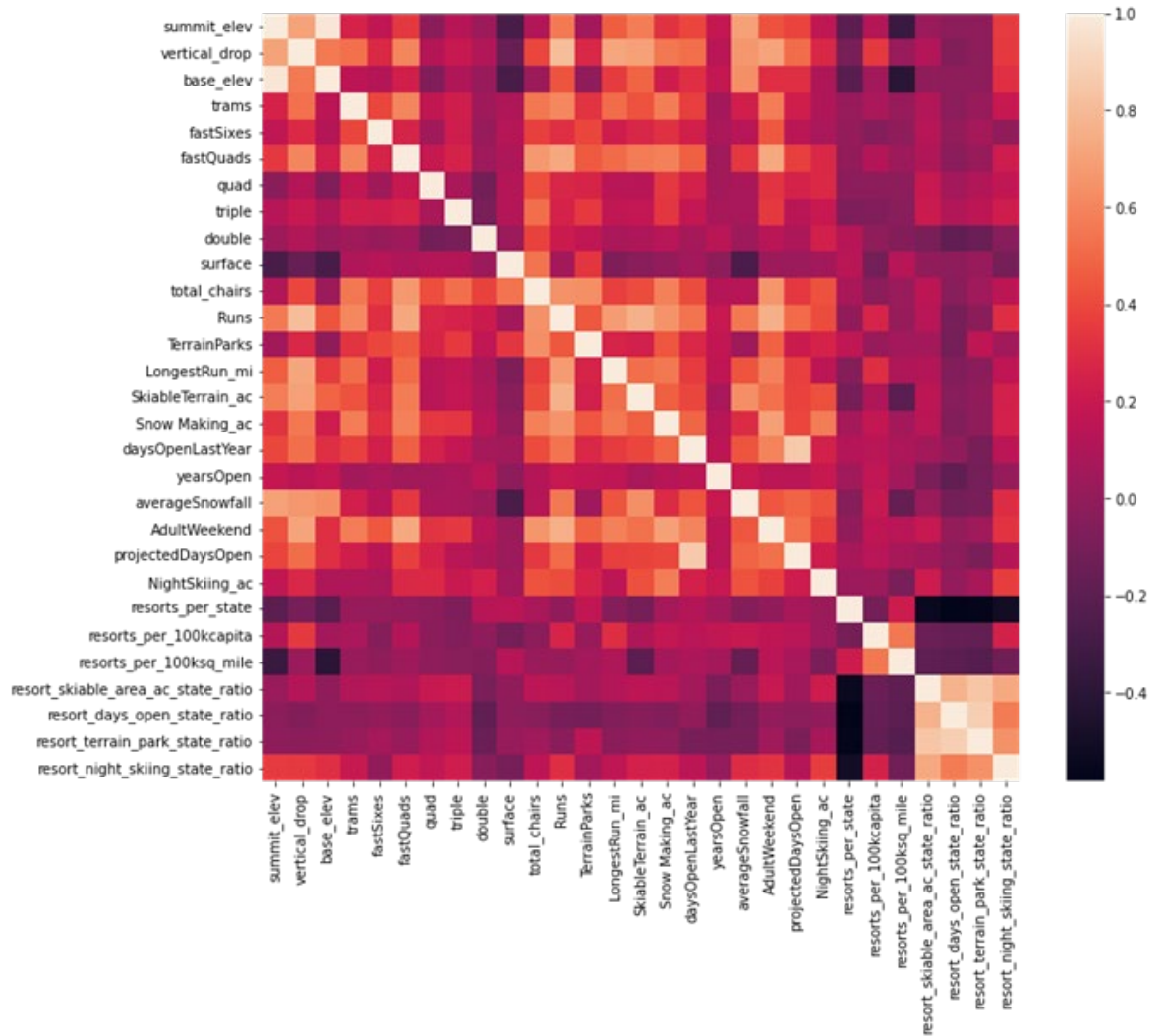
Modeling Results & Analysis:
Pre-processing & Training Data

- Data were split into training and test data sets.

- Three models were developed to predict/correlate ticket price:
  - Model based on average price
  - Linear regression model, optimized by 8 variables.
  - Random Forest model

- Random Forest model most accurate.
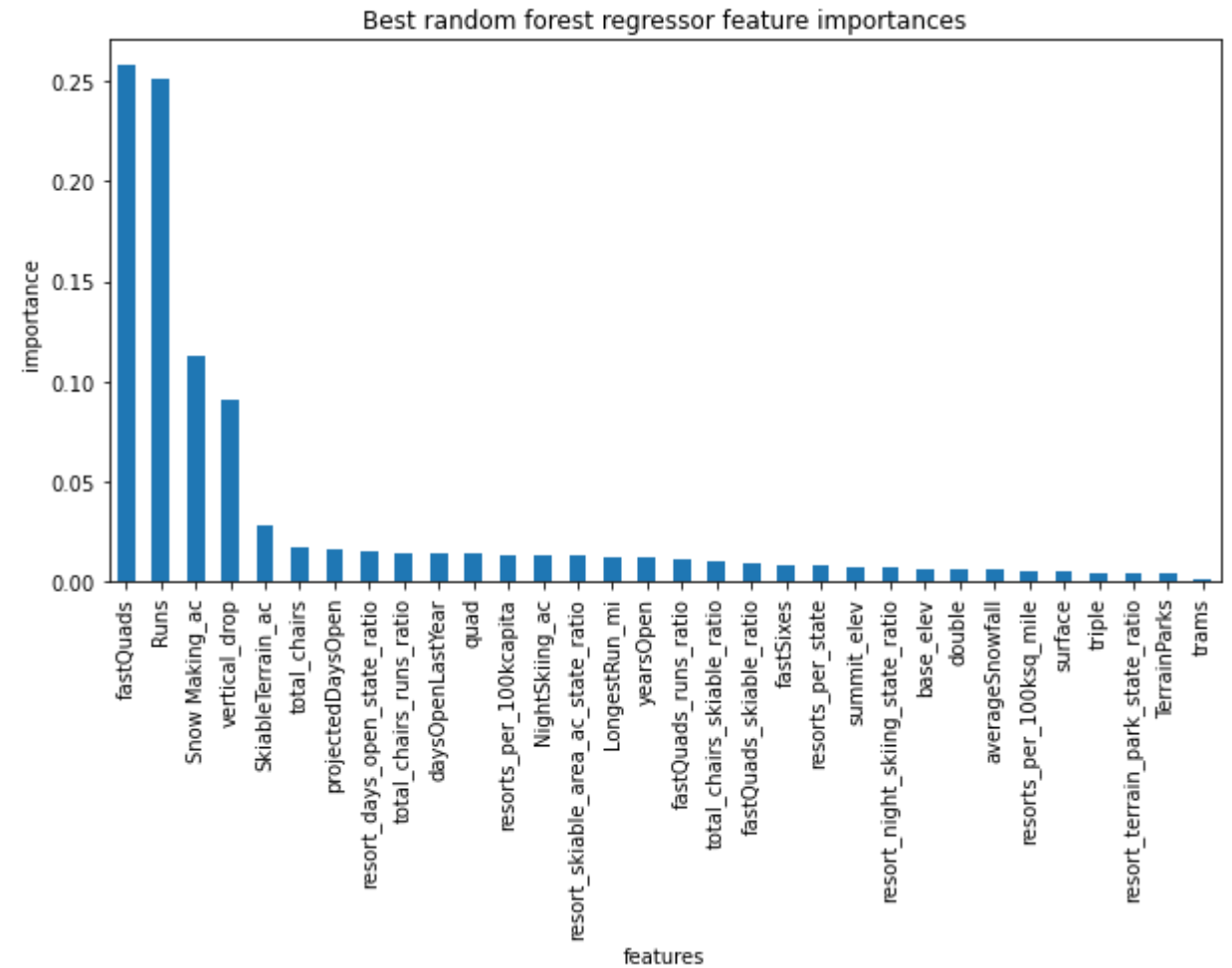
Modeling Results & Analysis:
Modeling

- Random Forest Model:
  - Market supports a ticket price: $95.87
  - Mean absolute error: +/- $10.39
- Scenario 1: Close up to 10 of the least used runs
- Scenario 2: Add Chair Lift & increase vertical drop
  - Support increase of ticket price by $1.99, ~$3.5 million increase in profit over one season
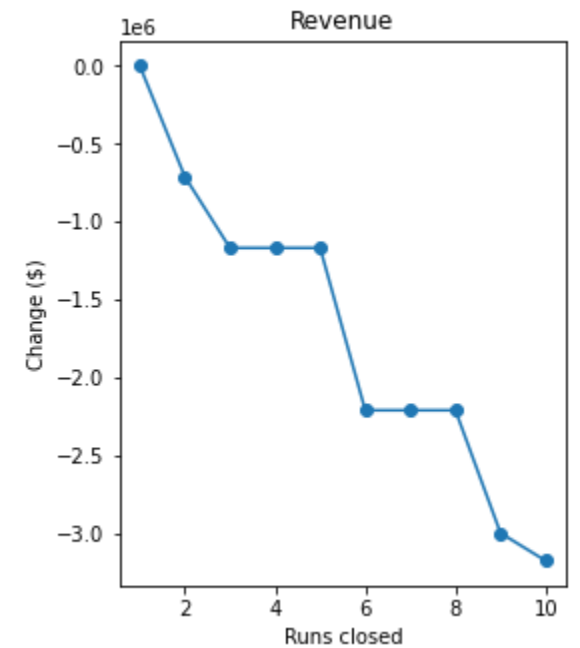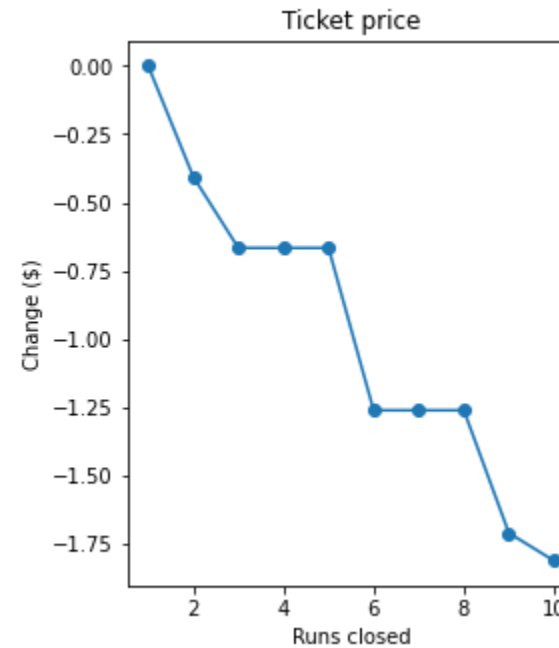
Conclusion

- Increase ticket price from $81 to $95
  - Profit increase of $24.5 million over one season
  - Increase price incrementally to verify model and mitigate risk

- Add one run that increases vertical drop
  - Increase profit by ~$3.5 million over one season

- Shutdown least used chair lifts.
  - One chairlift shutdown would not require a reduction in ticket price
  - Up to 5 chairlifts could be shutdown with minimal impact to market-supported ticket price
  - Shutdown chairlifts incrementally to verify model and mitigate risk