

# Treasure at the End of the Forest

A Data-Driven Strategy for Big Mountain Ski Resort



# Defining the Problem

1. What is the market-supported value of an adult weekend ticket at Big Mountain Resort?
2. What key features can Big Mountain invest in / reduce to support further increases in these ticket prices?

## PROBLEM IDENTIFICATION



# A New Pricing Strategy for Big Mountain Resort

## ● **CURRENT STRATEGY/CONTEXT:**

- (1) Ticket Price = Market Average + Fixed Premium
- (2) Recent Installment of Chairlift

## ● **OBJECTIVE:** Using regional ski resort data,

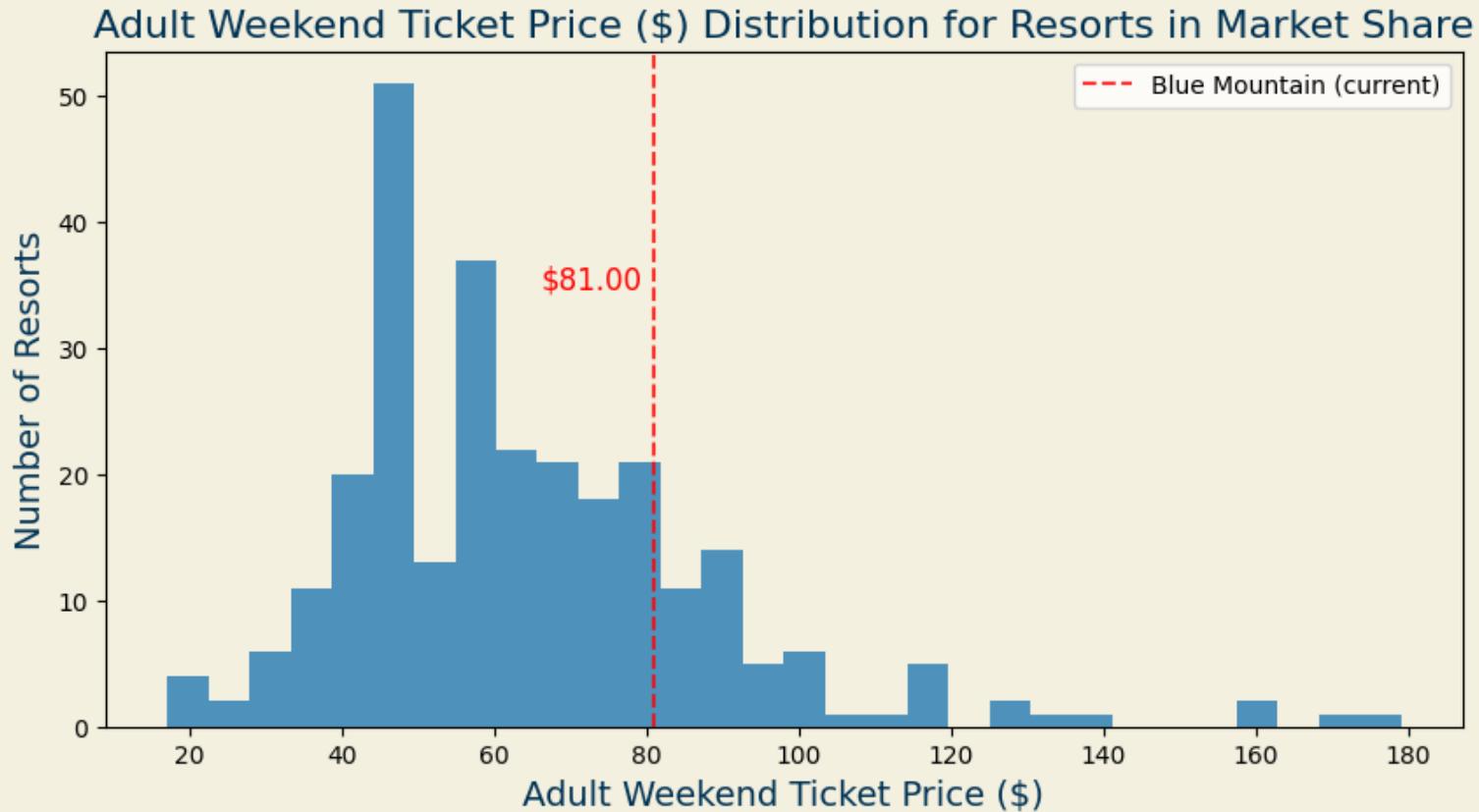
- (1) Determine how much, if at all, we can increase adult weekend ticket prices based on resort features
- (2) Systematically identify pricing levers and justify targeted operational investments or cutbacks (e.g., the recent chairlift installment).

# The Verdict

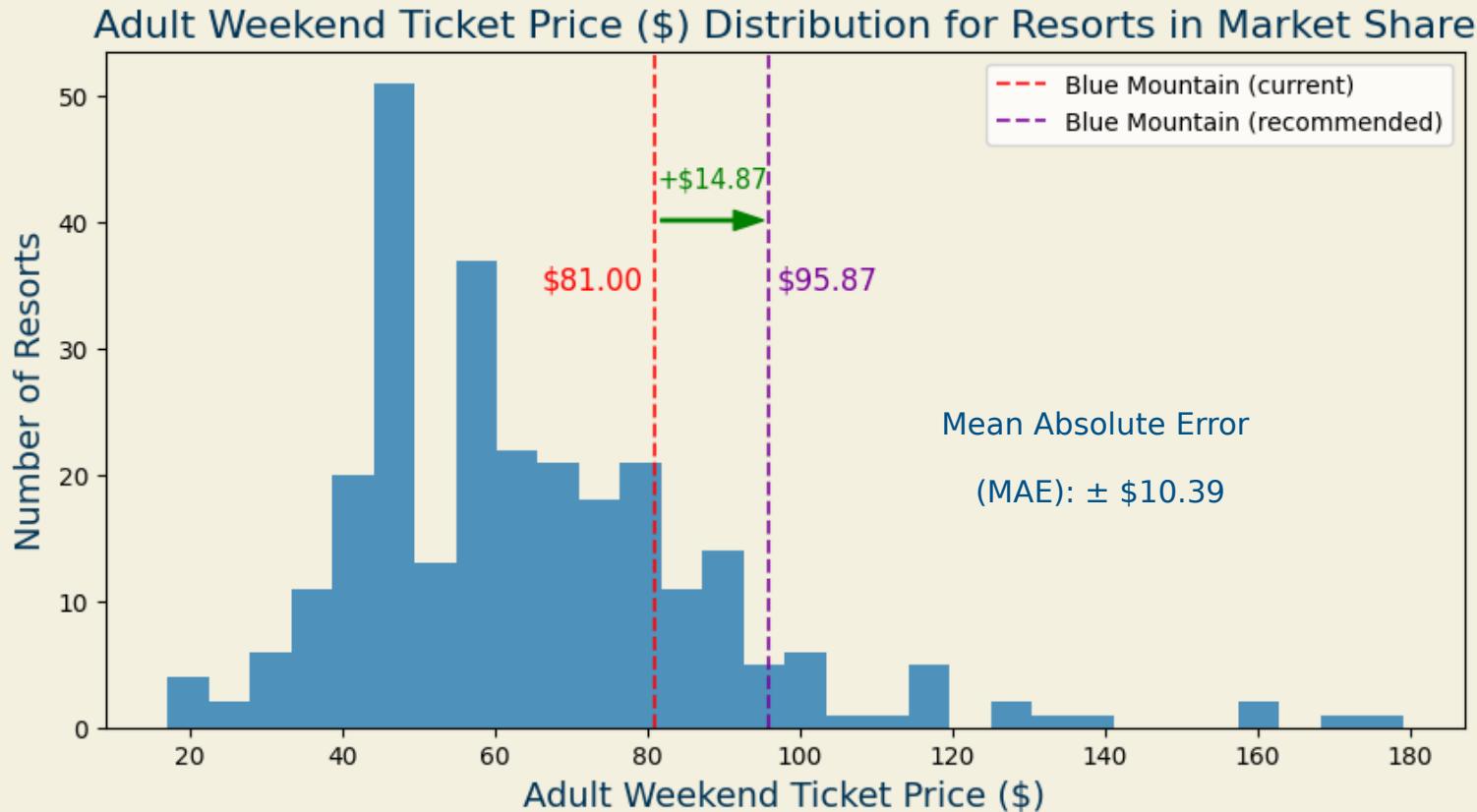
What is the market-supported value of an adult weekend ticket at Big Mountain Resort?



# Where Blue Mountain Stands



# Where Blue Mountain Stands



# Projected Revenue Gains

Assuming 350K visitors & 5 tickets per visitor:

	Price Increase	Ticket Price	Revenue Gain
Current	\$0	\$81	\$0
Recommended	\$14.87	\$95.87	<b>~ \$26M</b>
Factoring in New Chairlift	\$1.99	\$97.86	<b>~ \$34.8M</b>

Top value-driving features: FastQuads, Runs, Vertical Drop, Snowmaking

# The Model

Overview, Primary Results &  
Analysis



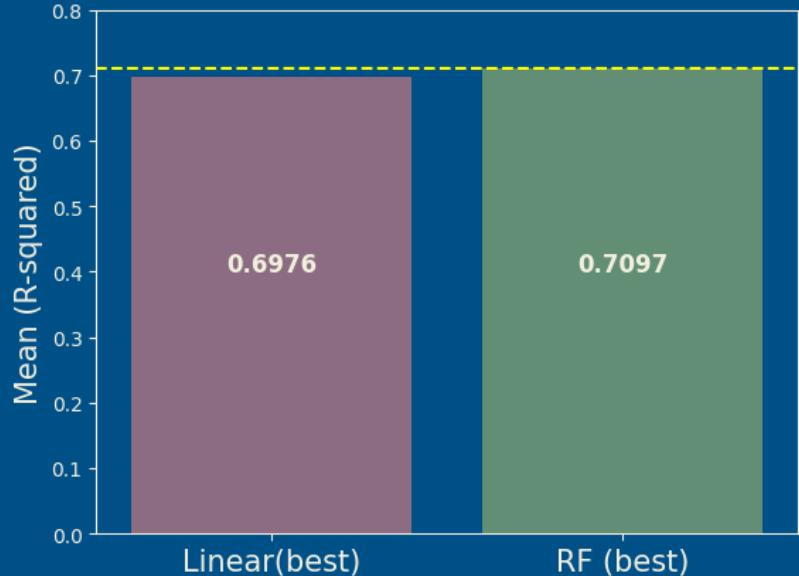
# Model Development

- **Pre-processing:** data cleaning, median imputation, scaling
- Mean ticket price as baseline “model”
- Primary model types: **Linear** vs. **Random Forest**
- Evaluation metrics:  $R^2$ , MAE, RMSE
- Cross-validation (5-fold) & grid search to identify top predictors in each category of model



# The Winning Model

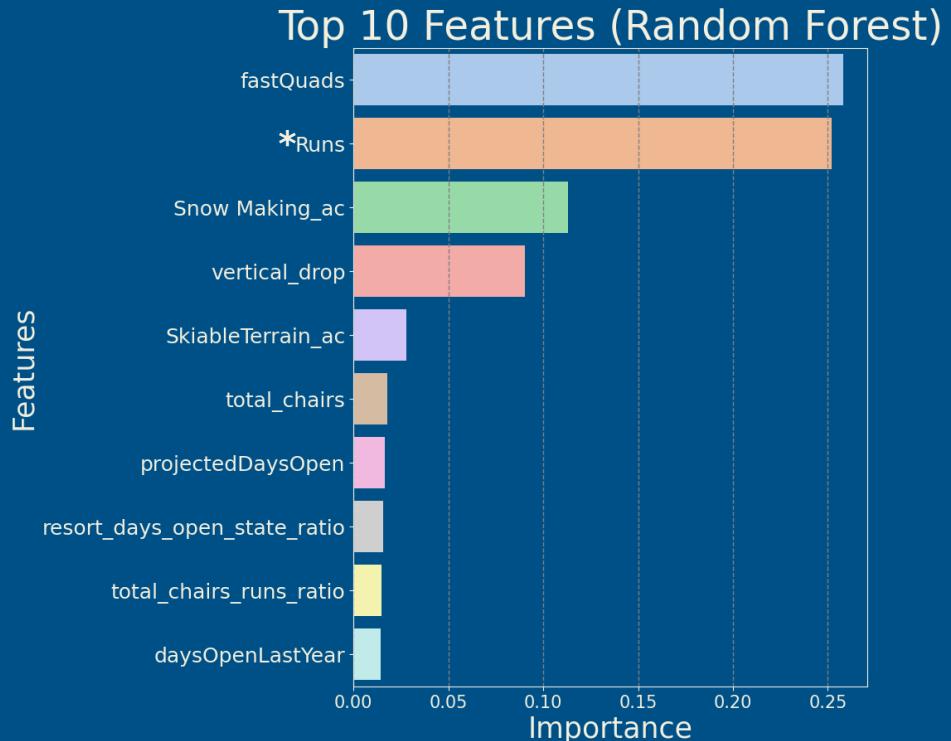
## Random Forest



Mean R <sup>2</sup>	0.6327	0.7097
Stdev R <sup>2</sup>	0.0709	0.0645
95% CI	[0.56, 0.84]	[0.58, 0.84]

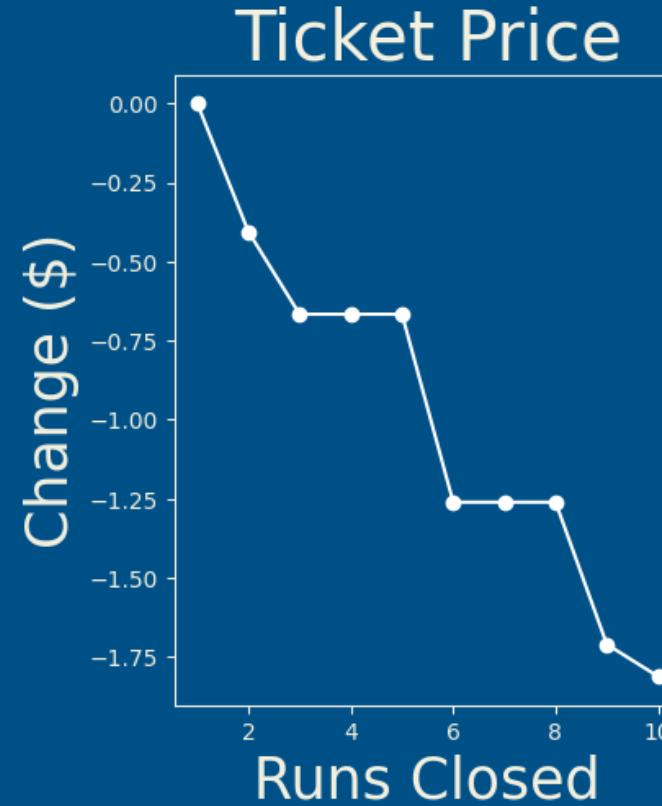
# What Drives Ticket Prices?

The highest impact features per Random Forest Regression, the top four of which are shared with that for Linear Regression.



# The “Runs” Feature

Big Mountain can close down one run with negligible negative impact on ticket prices.



# Drawing Conclusions

- Clear market support for price increase
- Infrastructure investments aligned with value perception

## Overall Strategy:

- Raise prices with modest infrastructure additions
- Limit run closures to no more than 1-2 runs
- Adjust pricing model with real-time inputs to guide capital planning

## Future Work:

- Additional Data: e.g., operational cost data (for ROI)
- Making intuitive sense of model predictions with leadership input
- Interactive pricing tool development

# Visuals

## **Analytical Figures & Charts**

Created in Jupyter Notebook using matplotlib, seaborn, pandas, and custom Python code.

# Image Credits

## **Conceptual & Metaphorical Images**

AI-generated via ChatGPT (OpenAI, 2025) using custom prompts with DALL-E.

# Data

## **Regional Ski Resorts in the U.S.**

Courtesy of Big Mountain Ski Resort