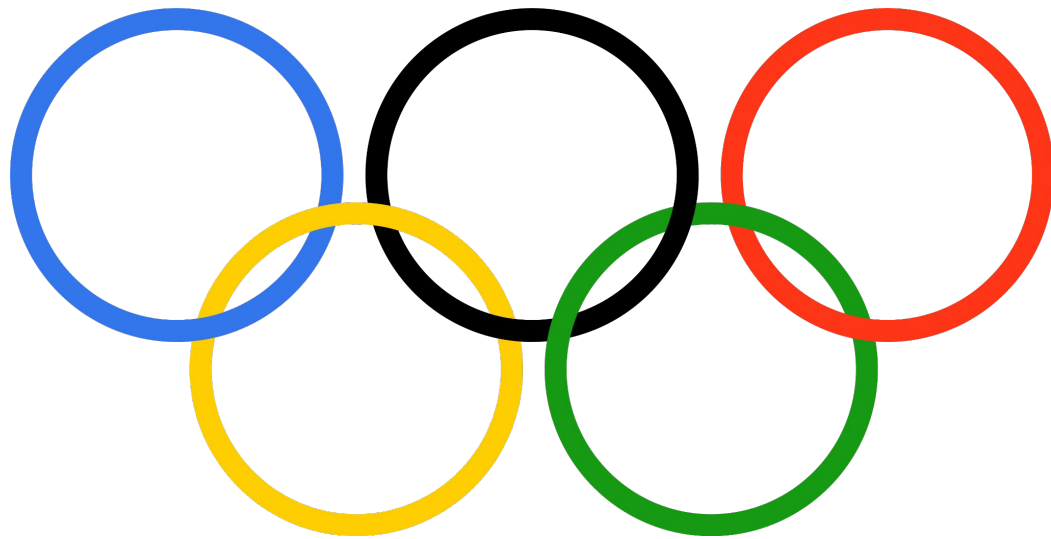
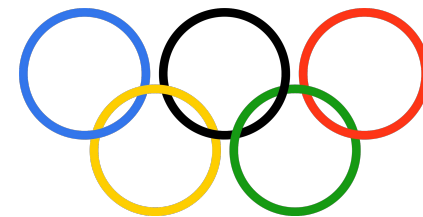


Visualizing the Olympics

INFO 526 - FALL 2024 - FINAL PROJECT

TEAM: MINT-MINDS-FOR-DATA-VIZ





Introduction

Objective: Analyze trends and patterns in the Olympics using historical data.

Questions:

1. Is there an ideal height for Olympic men's basketball? How has it changed over time?
2. How has the performance of different countries evolved? What major events influenced changes?

Motivation:

- Explore athletic evolution and its impact on performance.
- Identify historical patterns and dominant countries.

Data Description

- Dataset: `athlete_events.csv` from Kaggle.
- Key features:
 - 271,116 records, spanning 1896–2016.
 - Attributes: Age, Height, Weight, Team, Sport, Event, and Medal.
- Covers both Summer and Winter Olympics.

Challenges:

- Missing values in Height, Weight, and Medal columns.
- Sparse Medal data (only 39,783 entries).

Highlights from Exploratory Data Analysis (EDA)

1. Men's Basketball Height and Weight Trends:

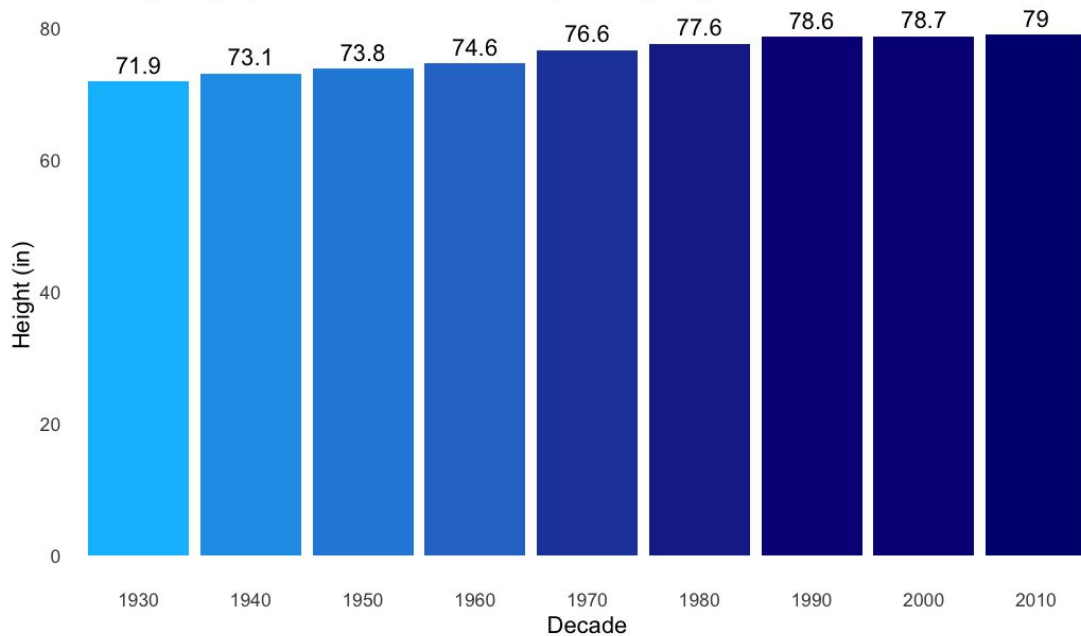
- Average height: ~77 inches (6 Foot 5 Inches & 195 cm).
- Average weight: ~202 pounds or 92 kg.
- Average height of basketball players has increased since 1936, but has now plateaued.

2. Medal Trends:

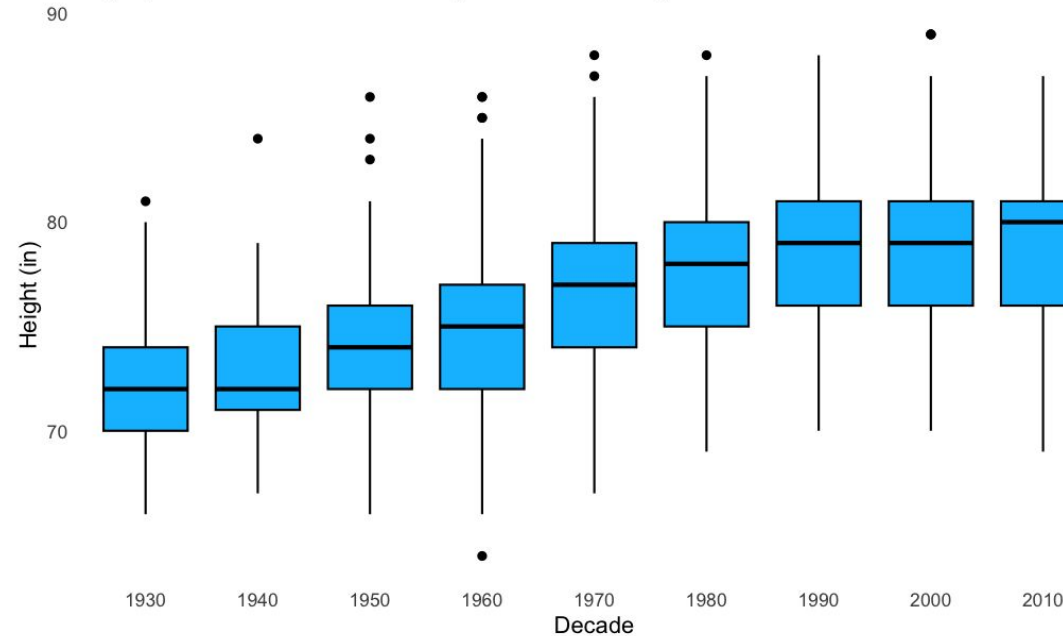
- USA and USSR/Russia dominate in medal counts.
- Historical events like boycotts and wars significantly impacted participation.

EDA Visualizations

Average Olympic Men's Basketball Player Height by Decade

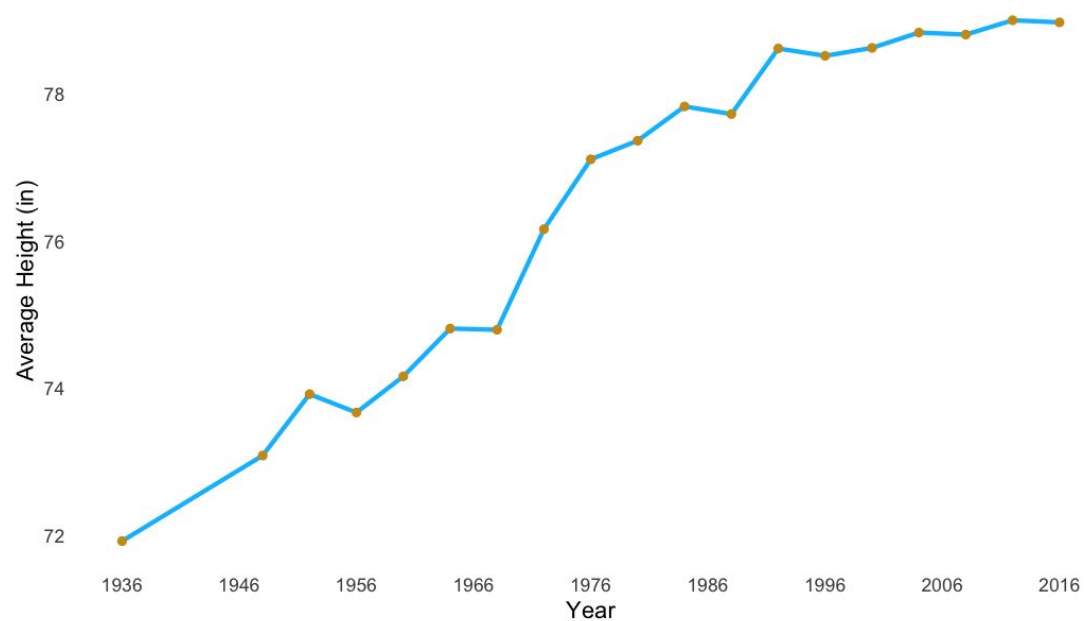


Olympic Men's Basketball Height Distribution by Decade

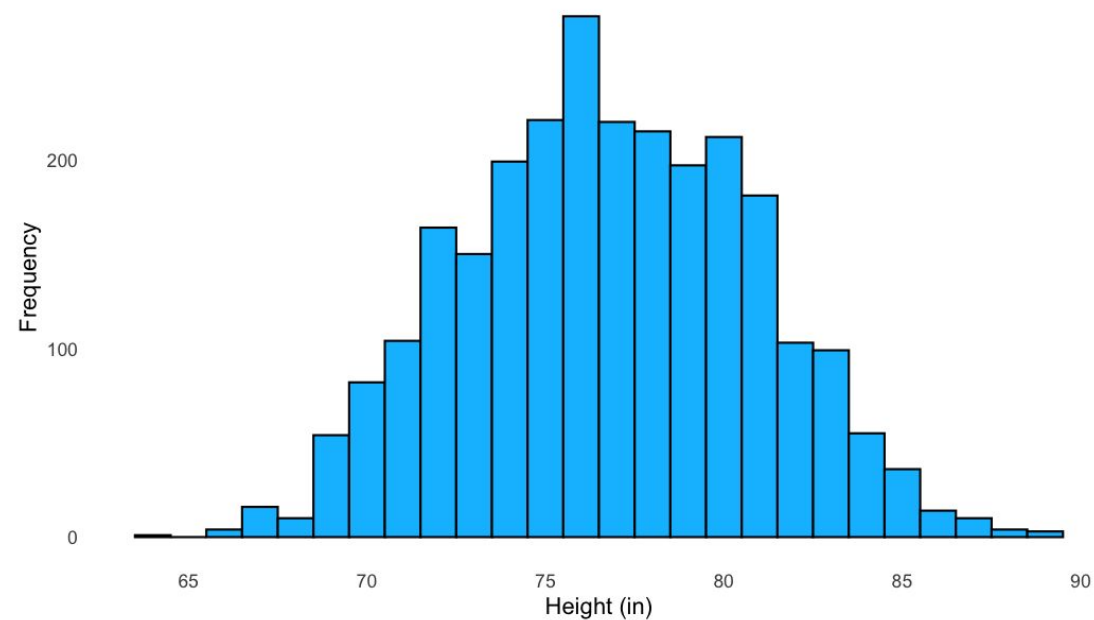


EDA Visualizations

Average Olympics Men's Basketball Player Height by Year

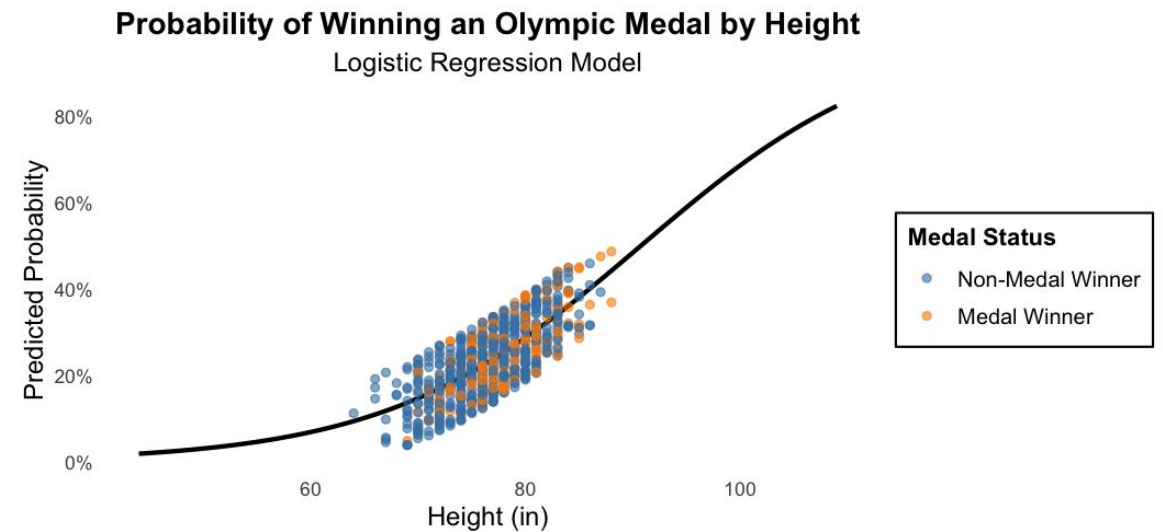
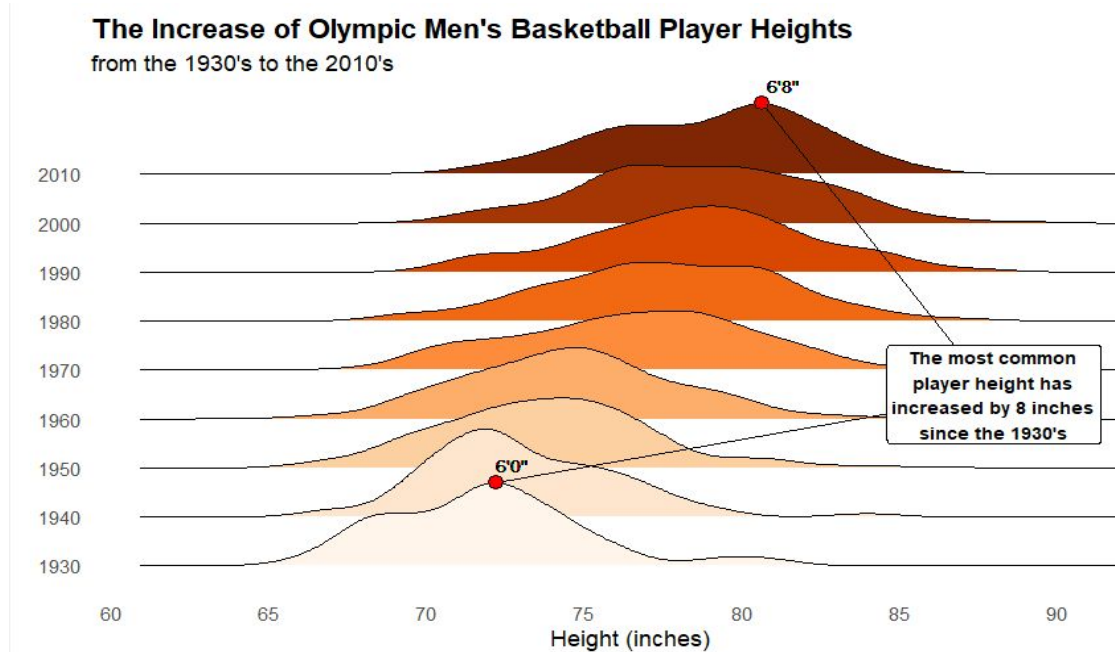


Distribution of Olympics Men's Basketball Player Heights



Height Trends in Men's Basketball

- The average height of Olympic men's basketball players has increased significantly.
- Logistic regression: p value = $6.05e-10$, height very statistically significant.
- AUC = .5973, slightly better than random guessing.
- This model only is not a great predictor because many other factors are involved (skills, teammates, other physical attributes, etc).



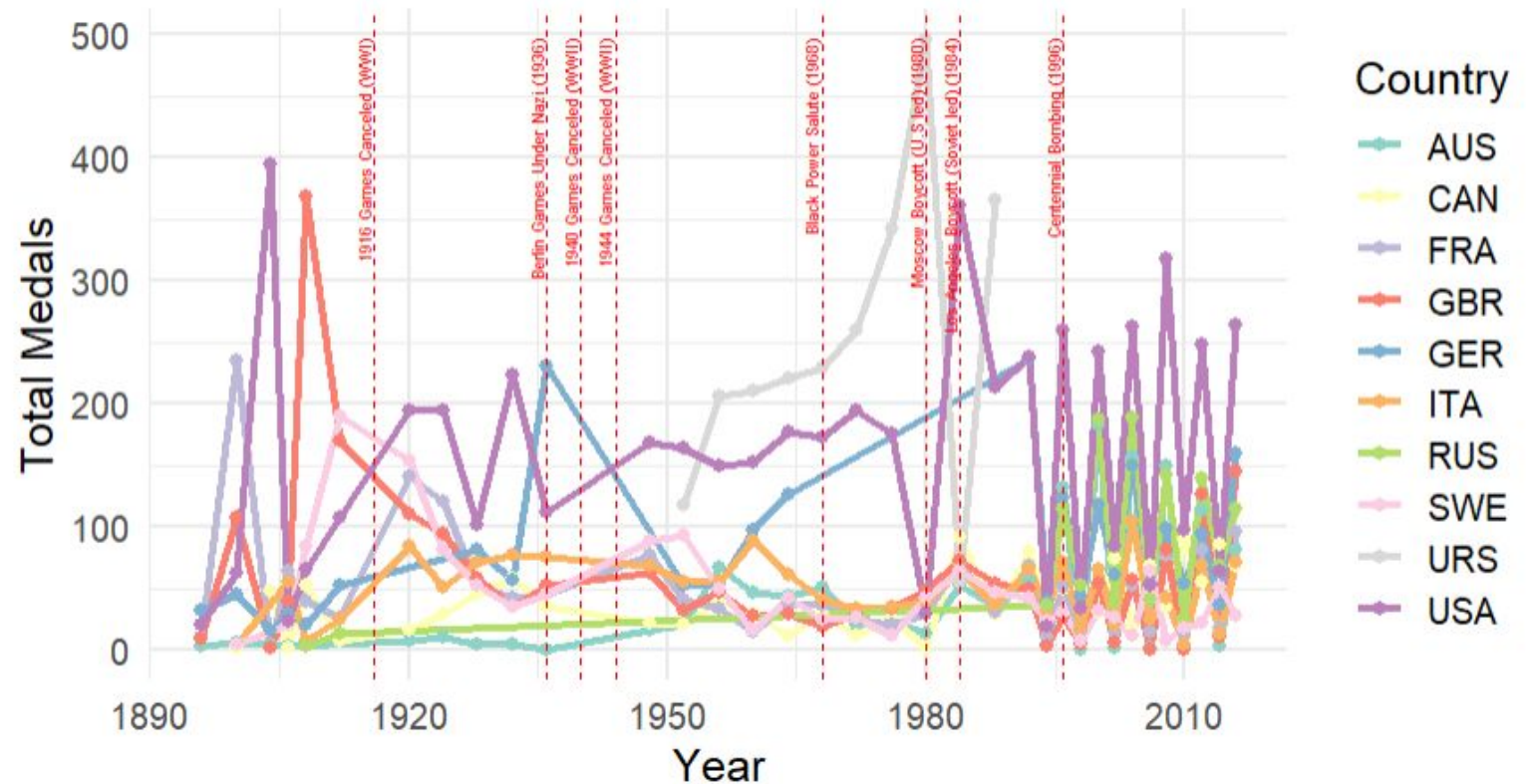
Medal Trends Over Time

Medal counts for top countries vary over time, influenced by major historical events:

- World Wars.
- Boycotts (e.g., 1980, 1984).
- Political and economic factors.

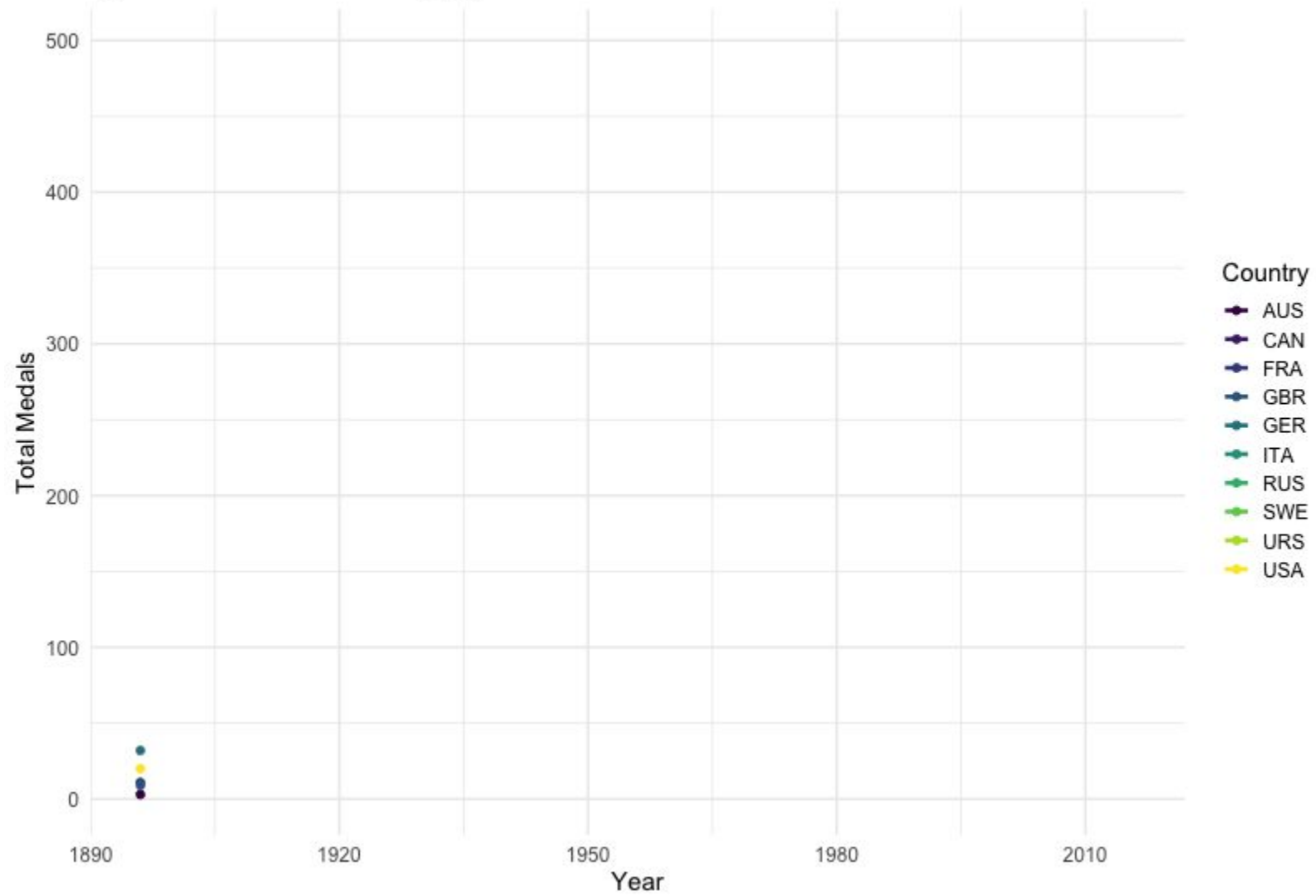
Medal Trends Over Time (Top 10 Countries)

With annotations for major historical events



Dynamic visualization of changing performances

Dynamic visualization of changing performances



Conclusions and Future Work

Findings:

- Olympic Men's Basketball player heights have increased significantly over time.
- Being taller increases one's odds of winning an Olympic basketball medal.
- Historical and geopolitical events heavily influenced medal trends.

Future Work:

- Explore trends for other events (e.g., athletics, swimming).
- Conduct gender-based analysis of trends and performance.