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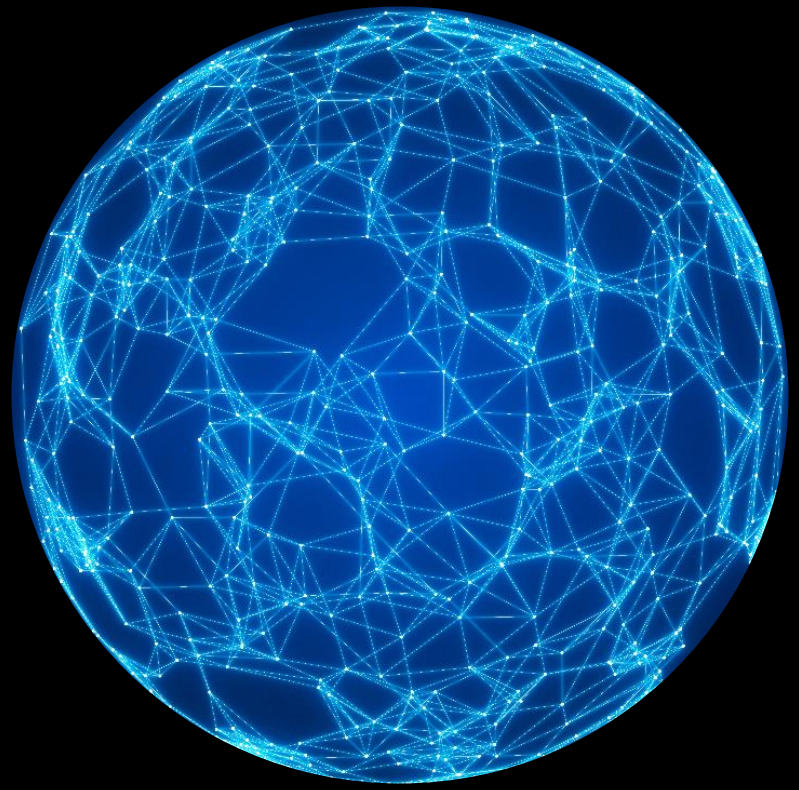


Deloitte AI Academy
Capstone Presentation

Group 5 - Allen Byrd, Cole Britt, Joshua Johnson, Saketh Nadriga, Zachary Tillery

MAKING AN IMPACT THAT MATTERS since 1845

Table of Contents

Business Understanding

Stakeholders

Computing Vision

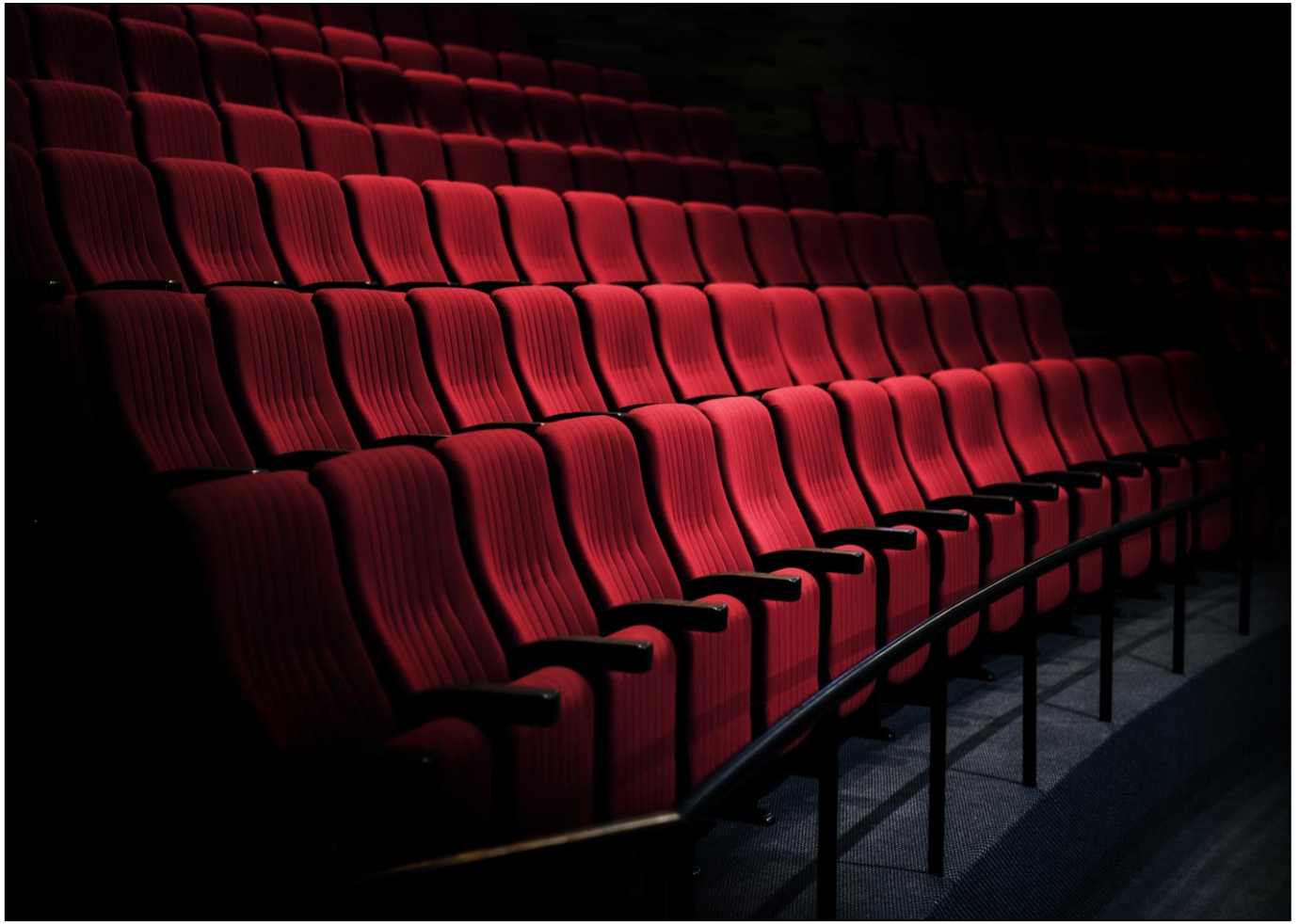
- An innovative and dynamic movie production company dedicated to creating their first film that showcases cutting-edge visual effects and makes a mark on the cinematic storytelling industry

Business Problem

- Provide actionable insights that the head of Computing Vision's new movie studio can use to help decide what type of films to create

  Insights found using:

  - Data analysis techniques
  - Statistical communication



Data Understanding

This slide explains the data sources we utilized, our rationale behind choosing the sources, and the utility that the sources add to our analysis

Data Understanding

- We retrieved our data from the movie_budget.csv file and the IMDB SQL database, which served as the primary sources of our analysis
- Datasets provided insight into the production budget and revenues
- We were able to join the datasets by the name of the movie

Data Analysis – Production Budget

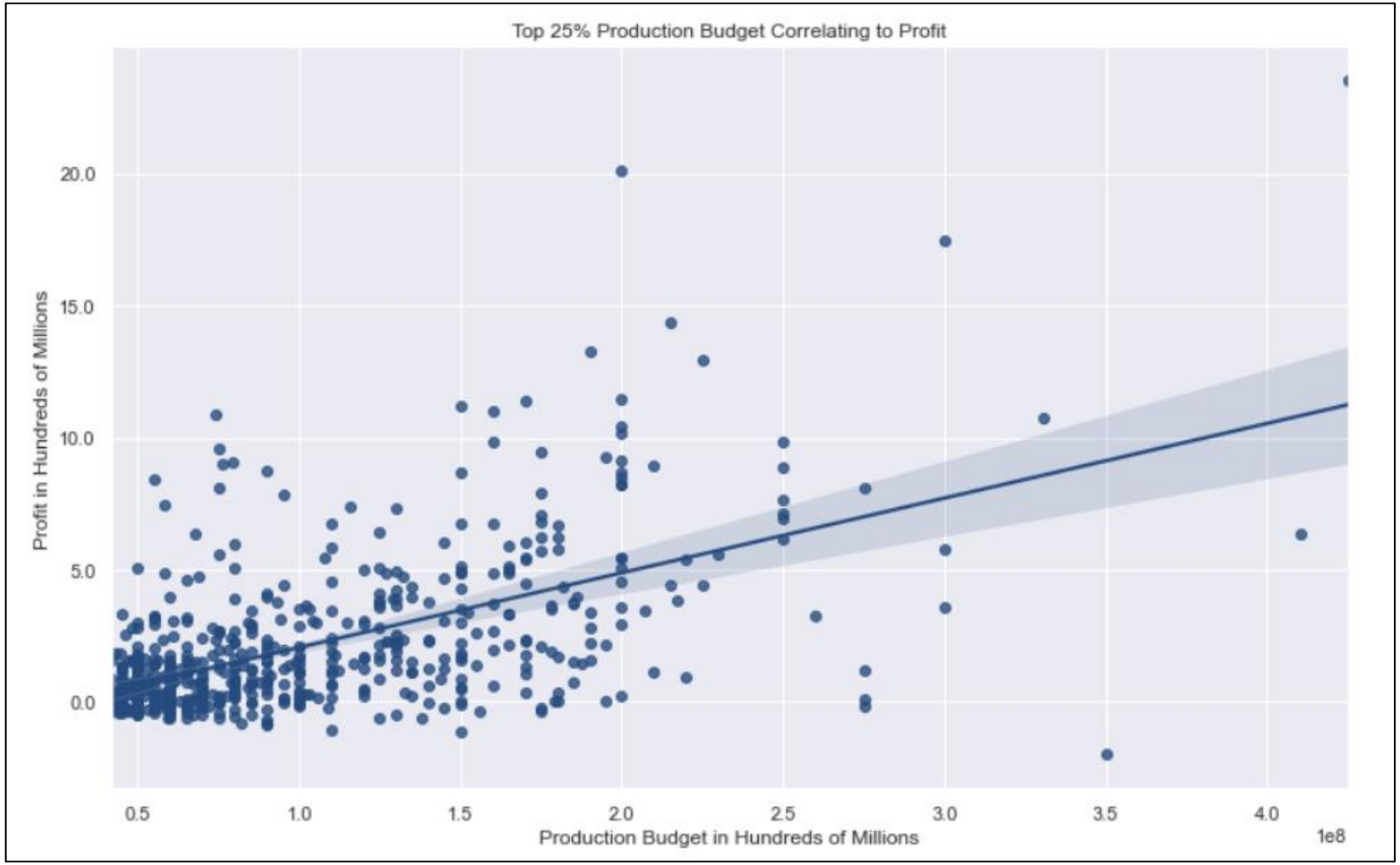
We have analyzed the relationship between production budget and profit to determine the effects of production budget

Rationale

- This graph analyses profit by production budget
- The relationship between production budget and profit provides an accurate representation of where earnings expectations should fall

Results

- The regression line provides an idea of where profit will fall given the production budget
- As production budget increases, the opportunity for higher profits increases



Strategic Recommendations – Production Budget

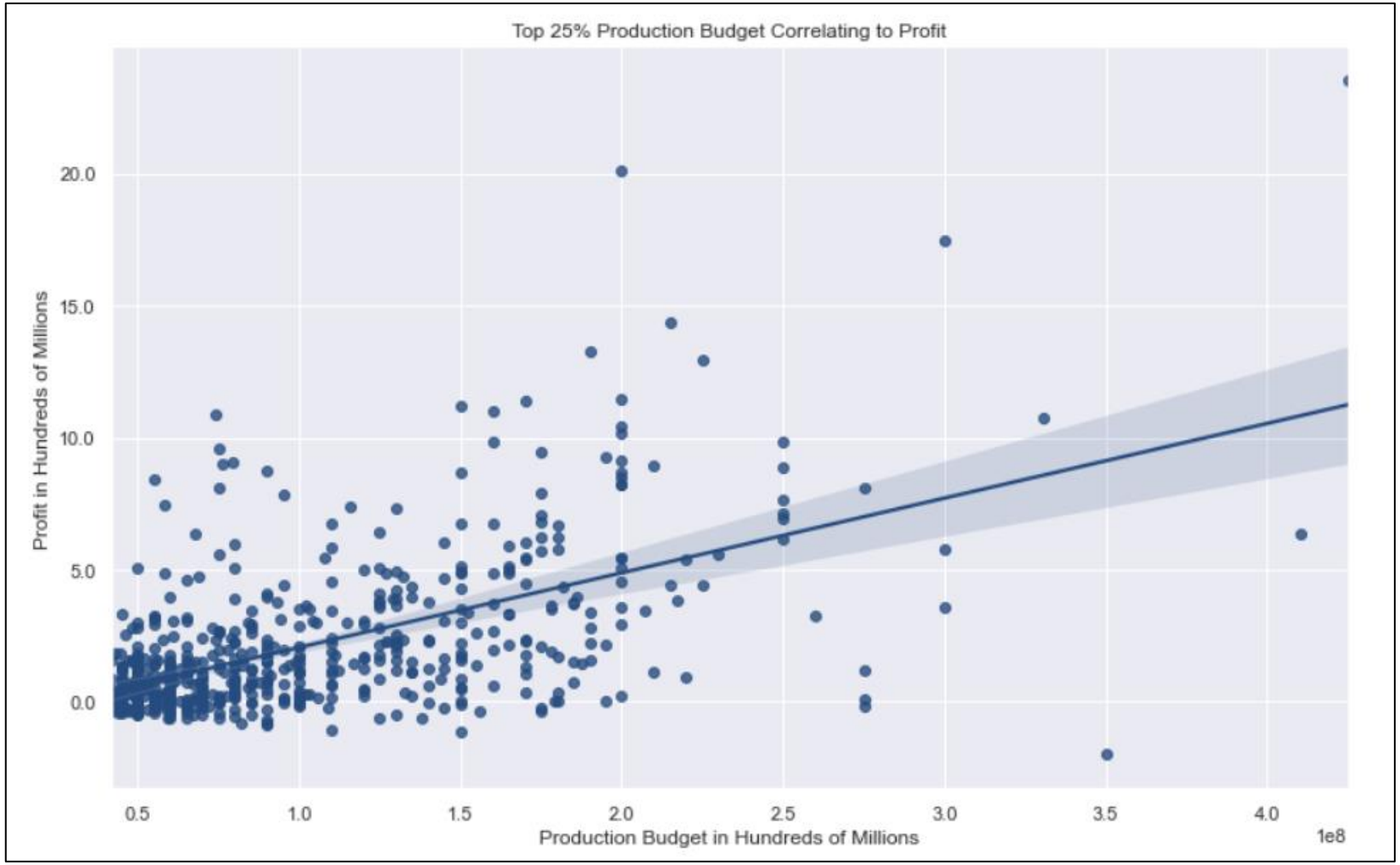
We have enumerated the limitations of our analysis and our recommendations based on the analysis

Limitations

- This data is the top 25% of profit from the data collected, so the lowest budget analyzed starts at 42 million dollars
- There are outliers within this plot that either make considerably more profit for the budget or considerably less profit for the budget

Recommendations

- Profitability outcomes tend to increase with production budget
- We recommend allocating a production budget that maximizes the chance of profitability and maintains a reasonable financial risk to Computing Vision



Data Analysis – Director

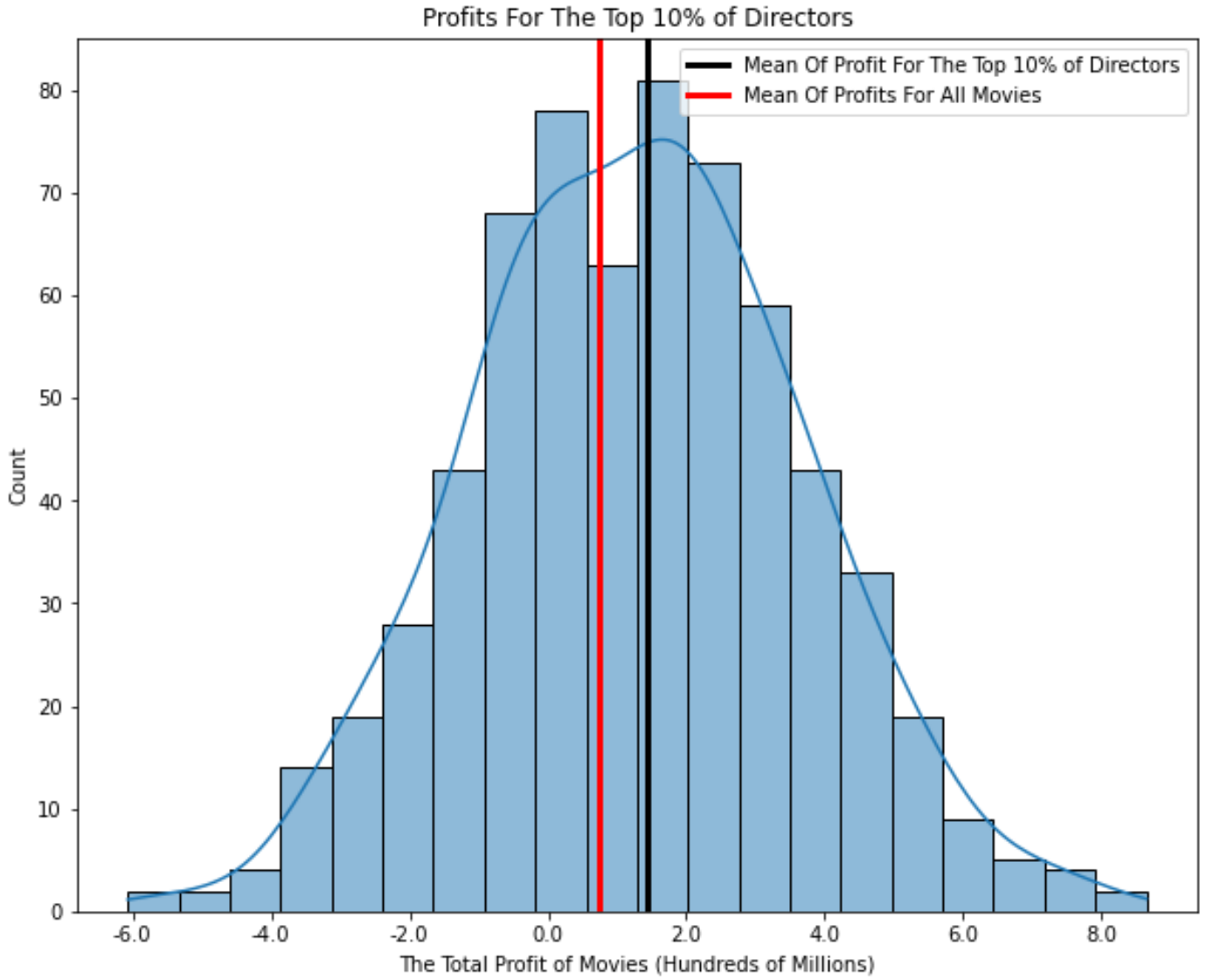
We have analyzed the relationship between director and profit to determine the effects of the director

Rationale

- The graph on the right shows a normalized distribution of the profits for the top 10% of directors

Results

- The average profit for movies directed by the top 10% of directors is $138,087,313 while the average profit for all movies in the dataset is $72,947,804
- Accordingly, movies directed by the top 10% of directors, on average, outperform other movies by $65,139,508 or 47.17% better



Strategic Recommendations – Director

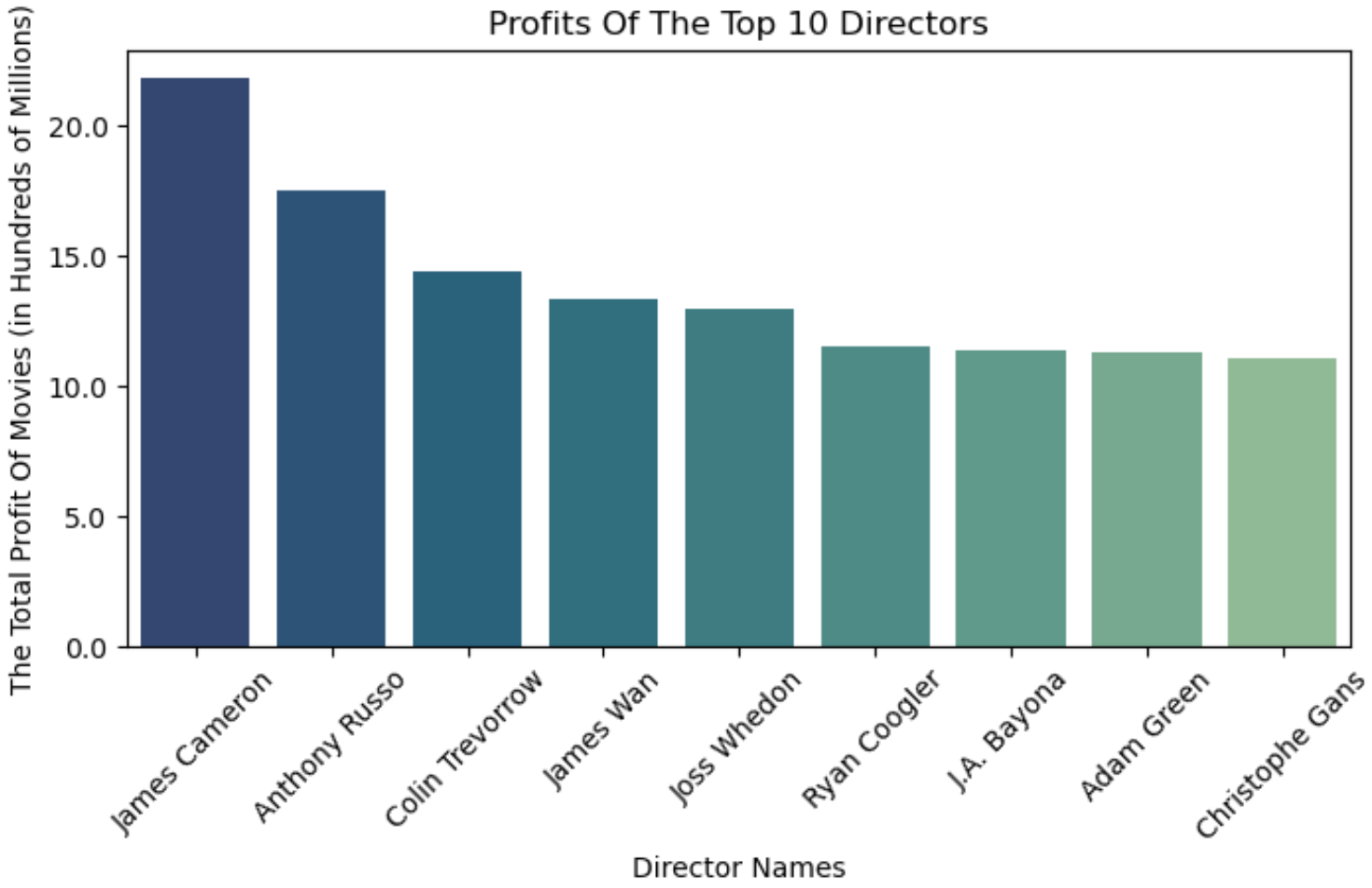
We have enumerated the limitations of our analysis and our recommendations based on the analysis

Limitations

- We only checked the top 10% of directors, there may be a better relationships between the directors and their profits

Recommendations

- Based on our analysis, we recommend that Computing Vision hires one of the directors within the top 10% of directors
- This will increase the probability of their movie outperforming other movies, in terms of profit



Statistical Analysis– Genre (1/2)

We have analyzed the relationship between genre and profit to determine the most popular and profitable genres

Overview

- Graph analyzes different genres vs. profit
- Given a range of 21 different genres
- All measured using different sample sizes

Results

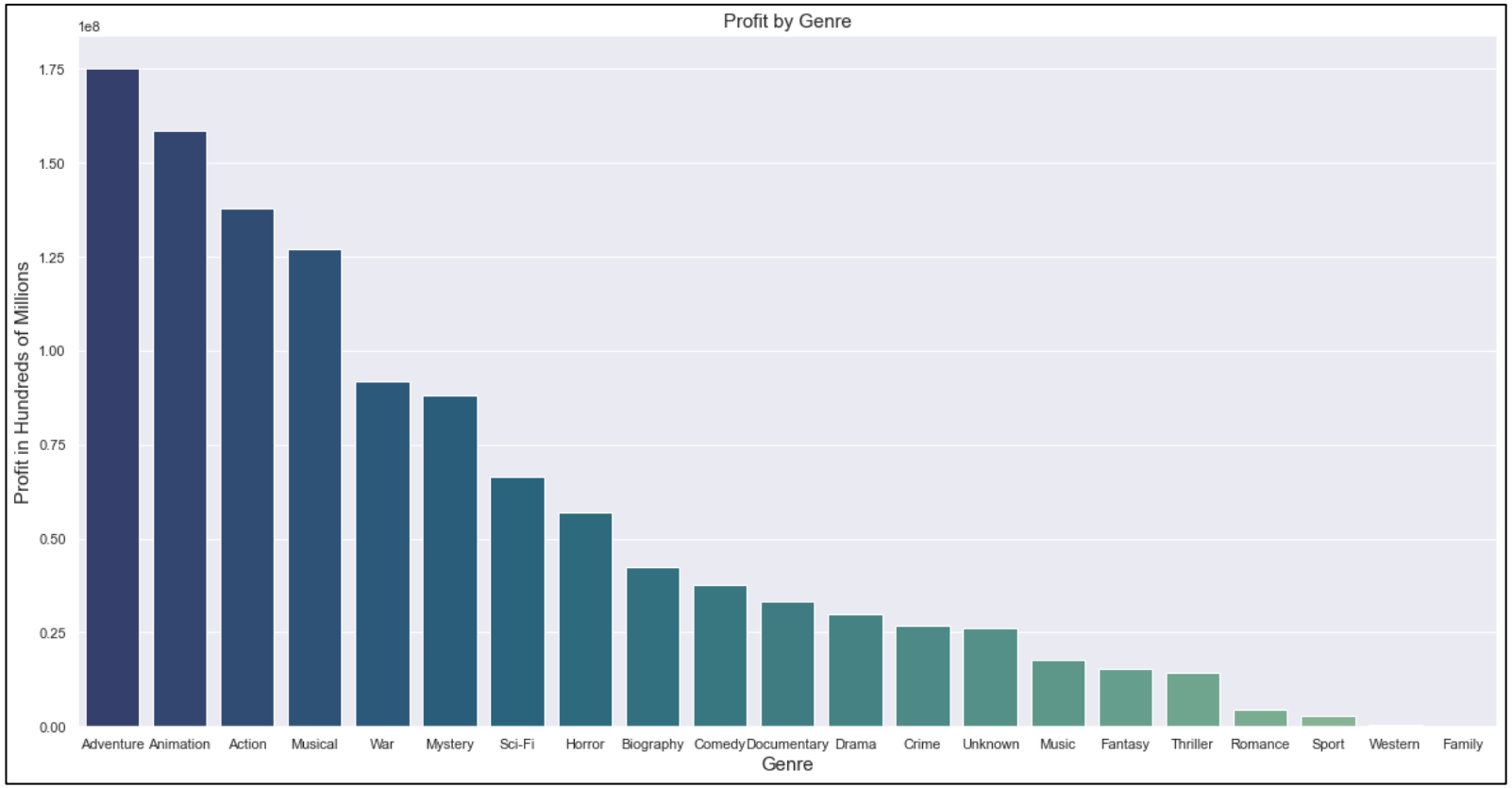
Top 3 Genres

High Profit
- Adventure
- Animation
- Action

Average Profit
- War
- Mystery
- Sci-Fi

Low Profit
- Biography
- Comedy
- Documentary

No Profits
- Sport
- Family
- Western



Statistical Analysis– Genre (2/2)

We have analyzed the relationship between genre and profit to determine the most popular and profitable genres

Hypotheses

H_0: The selected genre has no significant relationship to the profits a movie has gained

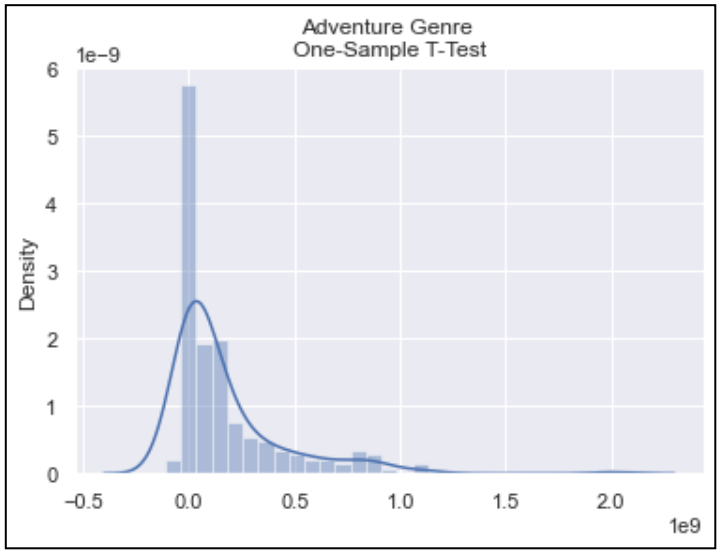
H_α: The selected genre has a significant relationship to the profits a movie has gained

Results

- Tested adventure and animation at a 95% confidence level
- The relationship between the adventure genre and profit is statistically significant
- Can not confirm that the relationship between the animation genre and profit is statistically significant

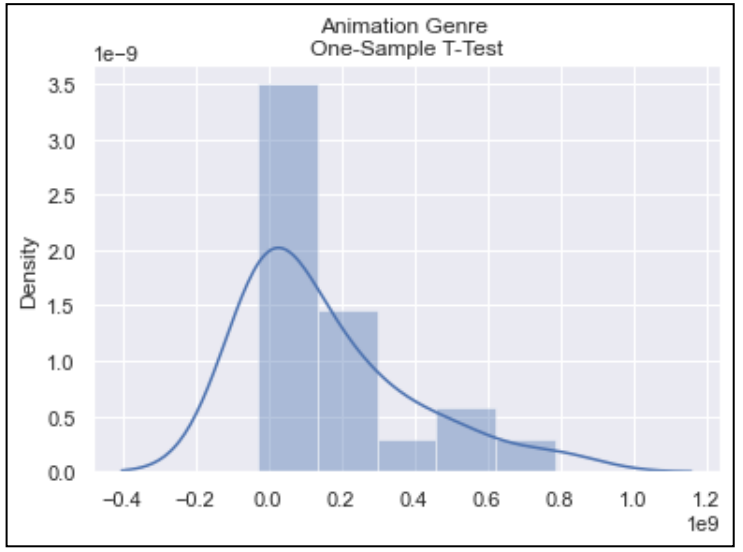
Testing Overview

A One-Sample T-Test was used to determine if average profits of movies in a certain genre differ from the mean profits of movies of all genres



P-Value: $6.24 * 10^{-7}$

Sample Size: 200



P-Value: 0.10

Sample Size: 21

Strategic Recommendations – Genre

We have enumerated the limitations of our analysis and our recommendations based on the analysis

Limitations

- Sample sizes of all genre categories were not equal
- Movies categorized with multiple genres were only considered for their primary genre

Recommendations

- Obtain data of more movies to make sample sizes for each genre equal
- Focus on producing an adventure, animation, or action movie to maximize profits
- Avoid sports, family, or western movies as they have not proven to return profits

Next Steps

Proposals for Computing Vision's future direction

Proposals

The best profits statistically result from choosing:

1. A director within the top 10%
2. A genre that produces a high profit margin
3. A higher production budget to increase profit

Recommendations

Computer Vision should:

- Select a director from the top 10% most profitable directors
- Create a film in the adventure genre
- Set a financially feasible production budget that is in line with the expected profits

Any questions?

Presenters

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