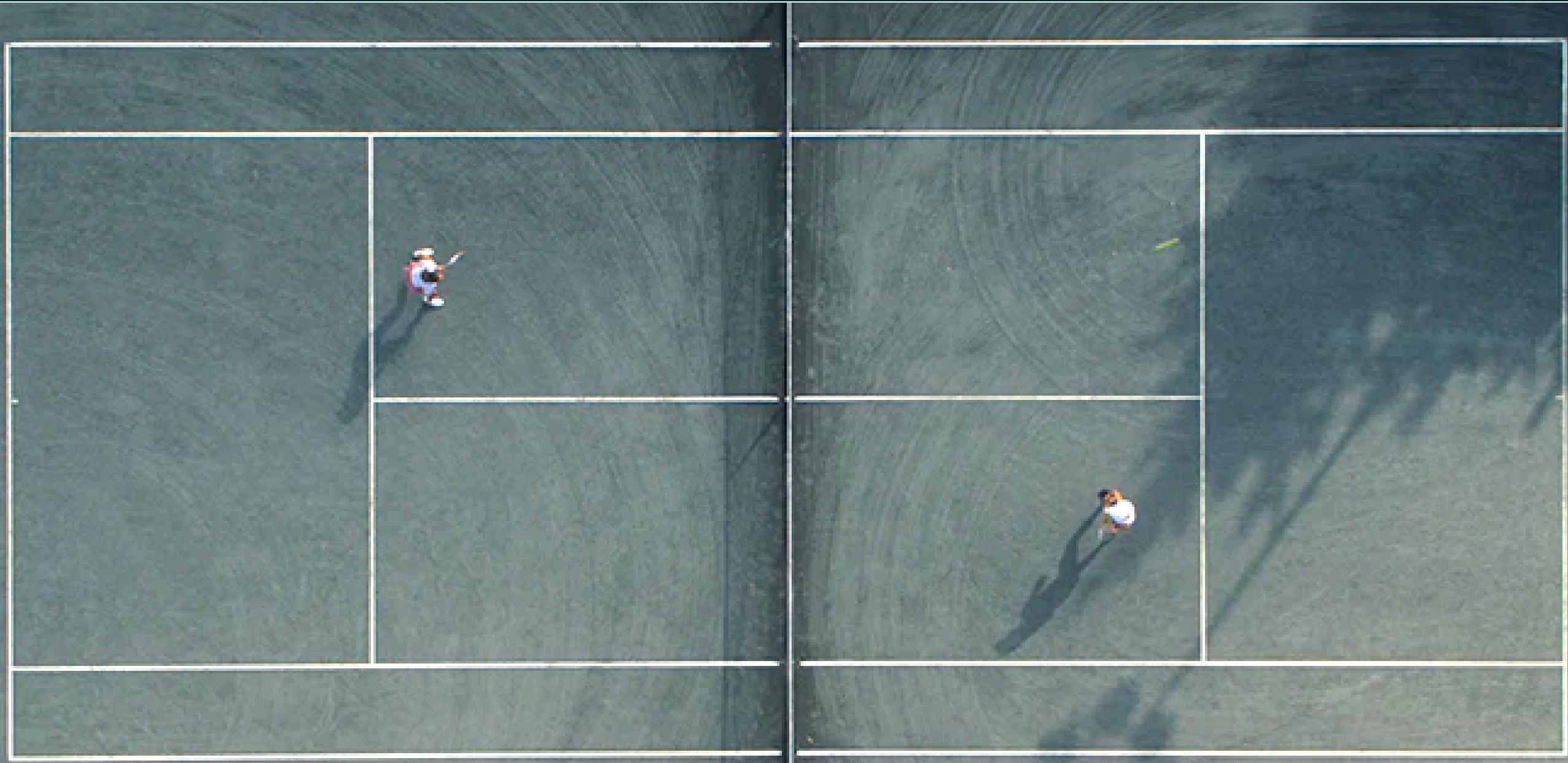


# Tennis Shot Analysis:

# AI Tennis Ball Machine



# Project Goal:

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To help companies with  
computer vision for their  
A.I. Tennis Ball Machines

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# Data:

I created all the data used in this analysis.

The dataset consisted of approximately 3,000 images

Forehand and Backhand Tennis Shots

forehand →



# Methods:

Filming/editing videos of two different tennis shots:

- Forehands
- Backhands

Extracted frames from video files

Resizing Images

Modeling

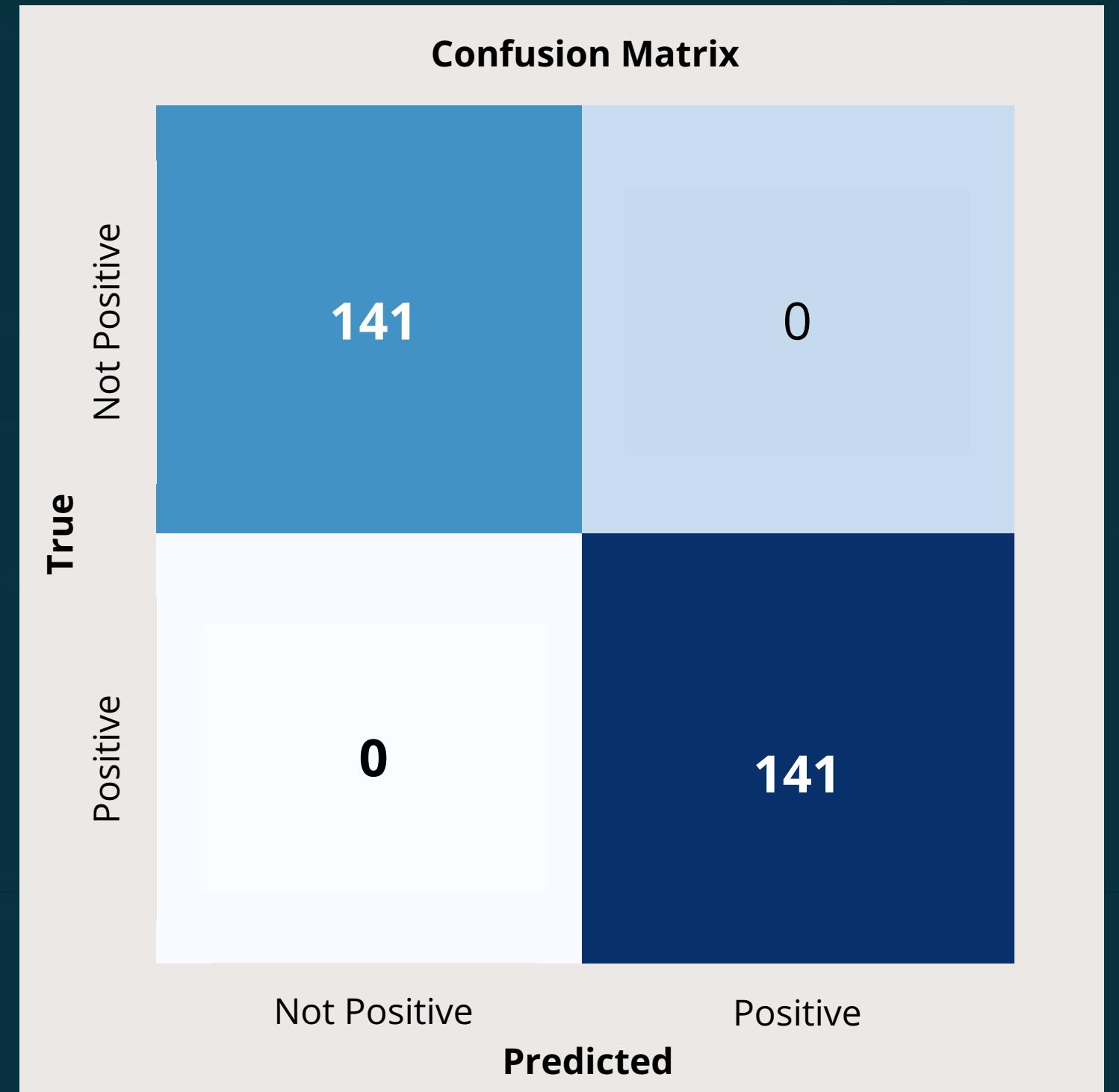
backhand →



# Results

$$\left( \text{true positives} + \text{true negatives} \right) \div \text{total number of instances} = \text{accuracy}$$

- Model showed 100% on accuracy
- 10% of the dataset sampled on unseen data



# Model Evaluation

Suspiciously high



Most likely over-fitting due  
to low variance in the  
data.



# Limitations



Small sample of data  
Low variance in the dataset

# Conclusions

- The model is performing perfectly on a low-variance training data.
- Model is likely overconfident



# Reccomendations

- Increase the amount of variance in the dataset.
- Use images from start of swing preparation until completion of swing.

# Next Steps

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- Get 10x more data:
  - Different People
  - Different locations
  - Different angles



# Thank you



Questions?

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