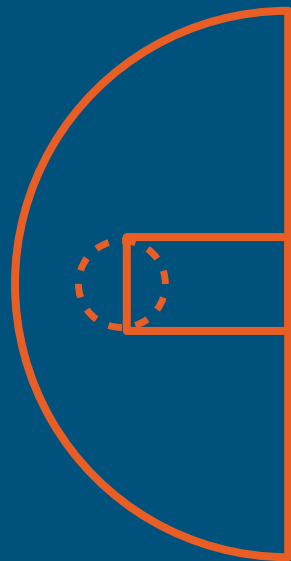


# The Art of Free Throws: A Data-Driven Perspective

Presented by: Tayo Castro, Harsh Vibhuti  
& Annie Dale



# A Bit of Background

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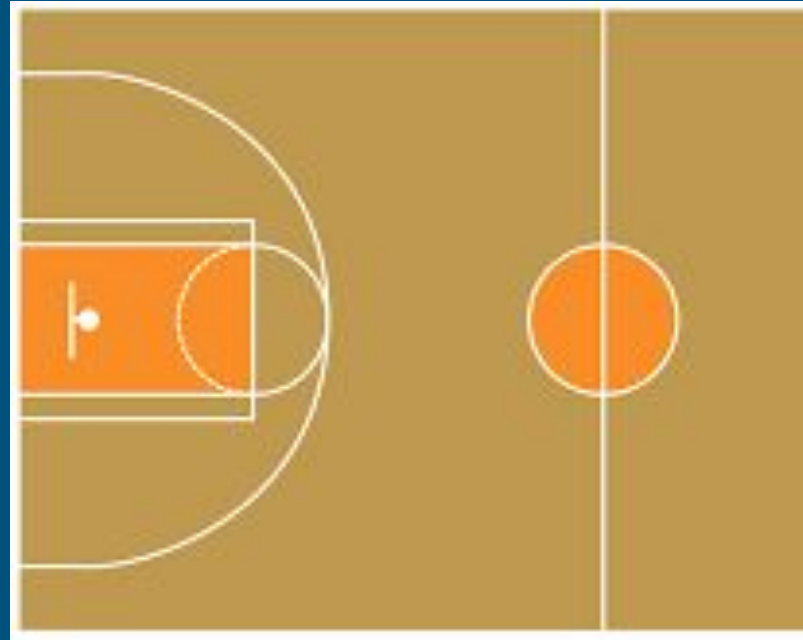
NBA

Usually 48 Minutes in 4 Periods

Max. 8 Periods

Free Throws Awarded

Max. 3 Free Throw Attempts



# Our Data

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Free throws attempted: ~620k

Free throws made: ~470k

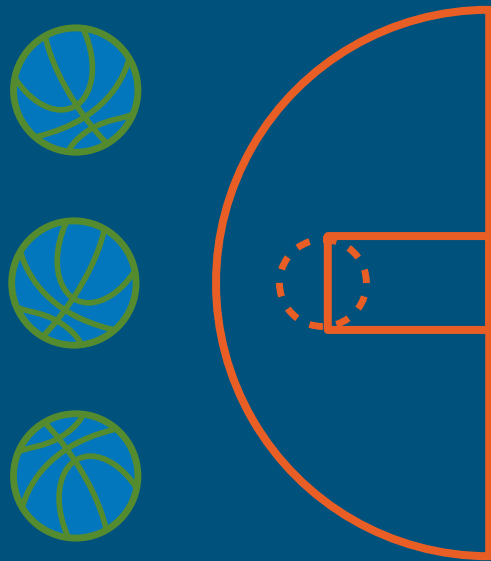
Players: 1,098

Teams: 34 (2 disbanded, 2 conferences)

Seasons: 2006 to 2015

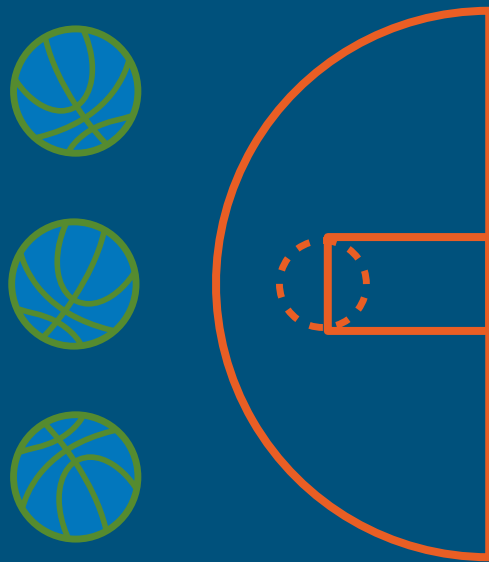
# Some insights:

- ~470k (76%) Shots were made in total
- ~42k playoff shots in total
- ~32k (7%) shots were made during playoffs
- ~76% of shots during playoffs were successful
- Home team won ~370k times



# Looking Into:

- What is the impact of home vs away on free throws?
- What is the impact of playoffs on free throws?
- What is the impact of how far into the game we are (in minutes) on free throws?
- Which players seem to be especially consistent in all situations? Meaning they always make/miss at about the same rate, regardless of any factors.
- How important are free throws in terms of winning/losing the game?

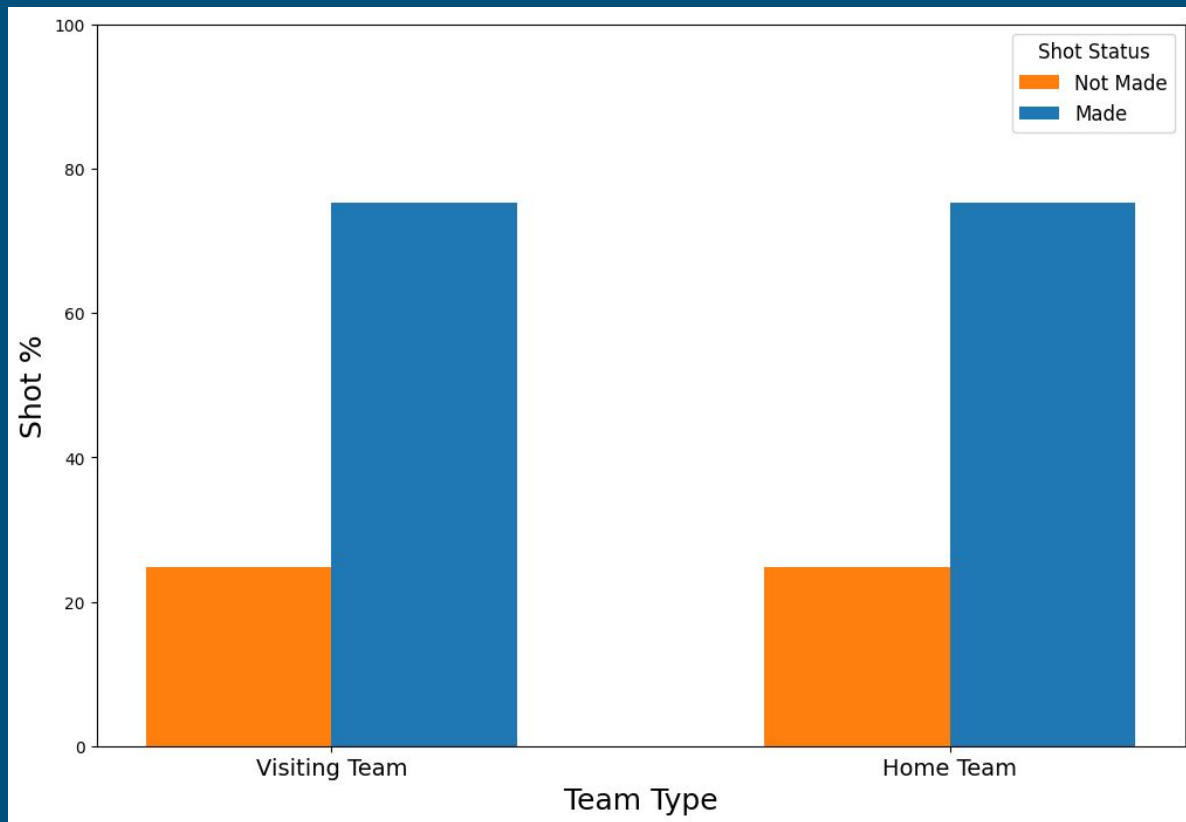




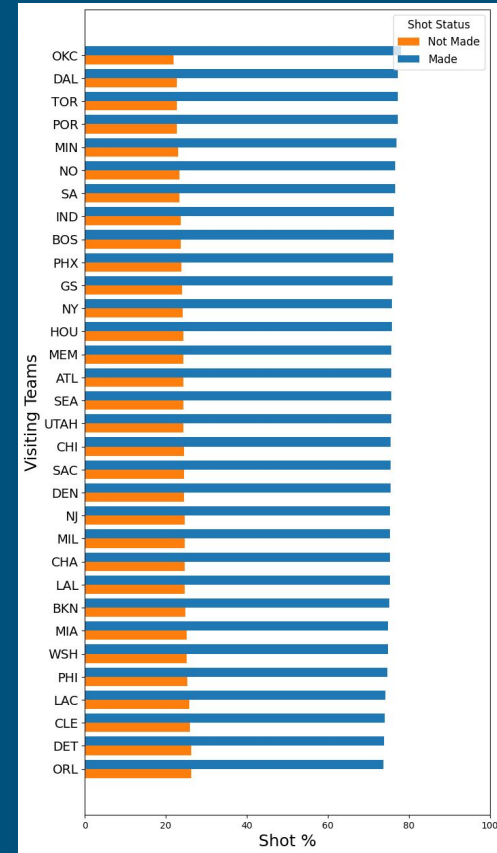
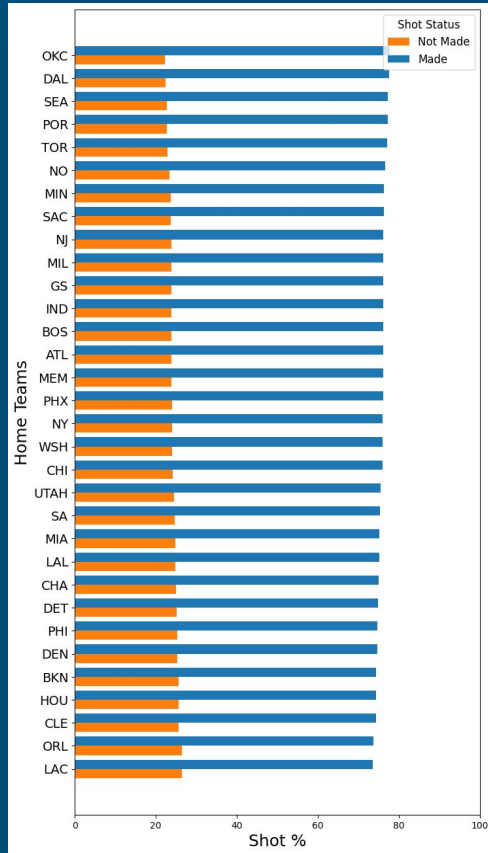
Q: How do home vs.  
away games affect  
free throws?



# Home vs. Away



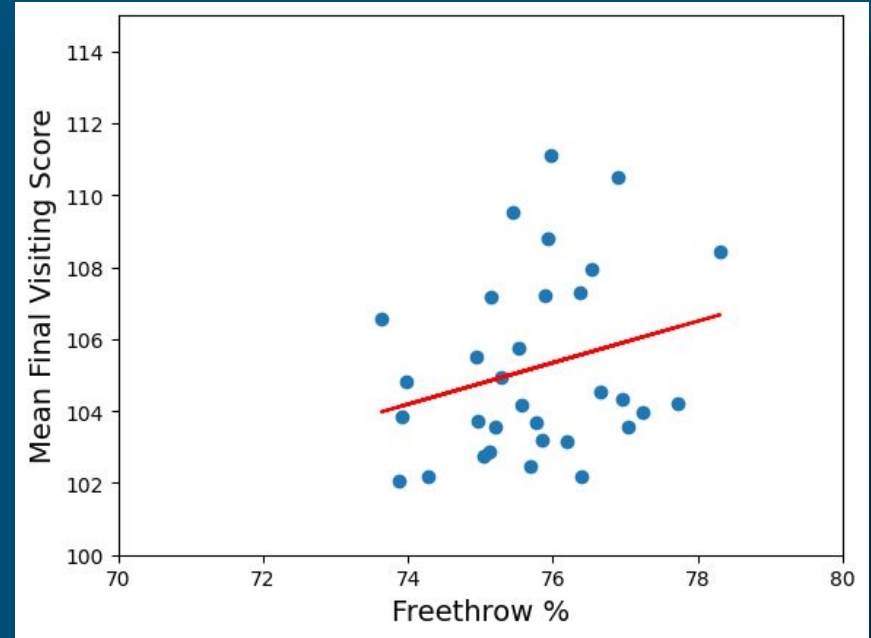
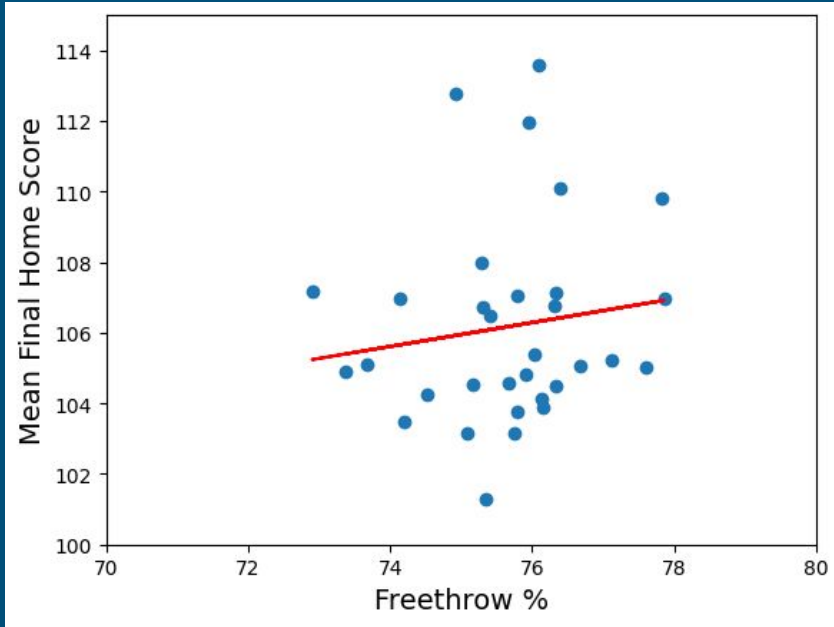
# Home vs. Away







Q. How important are  
free throws in terms of  
winning/losing the  
game?

# Free Throws Impact on Win Status

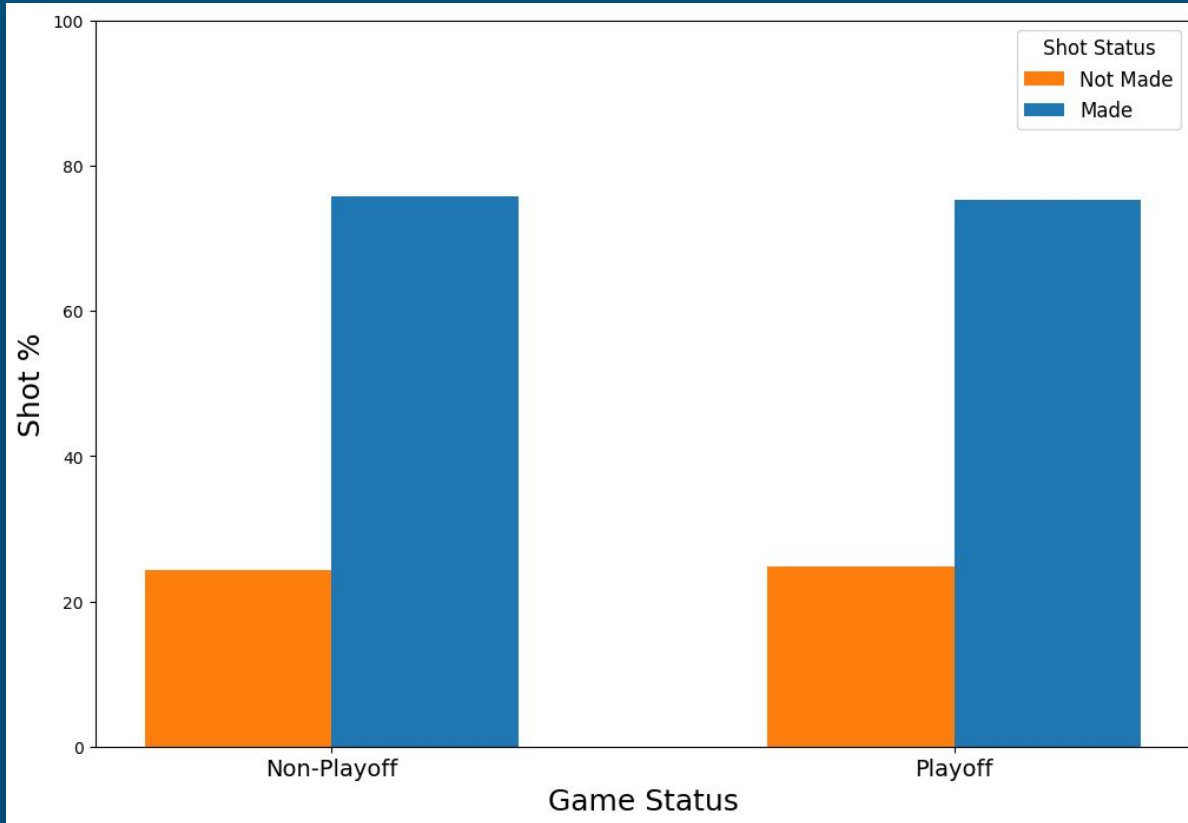




Q. What is the impact  
of playoffs on free  
throws?

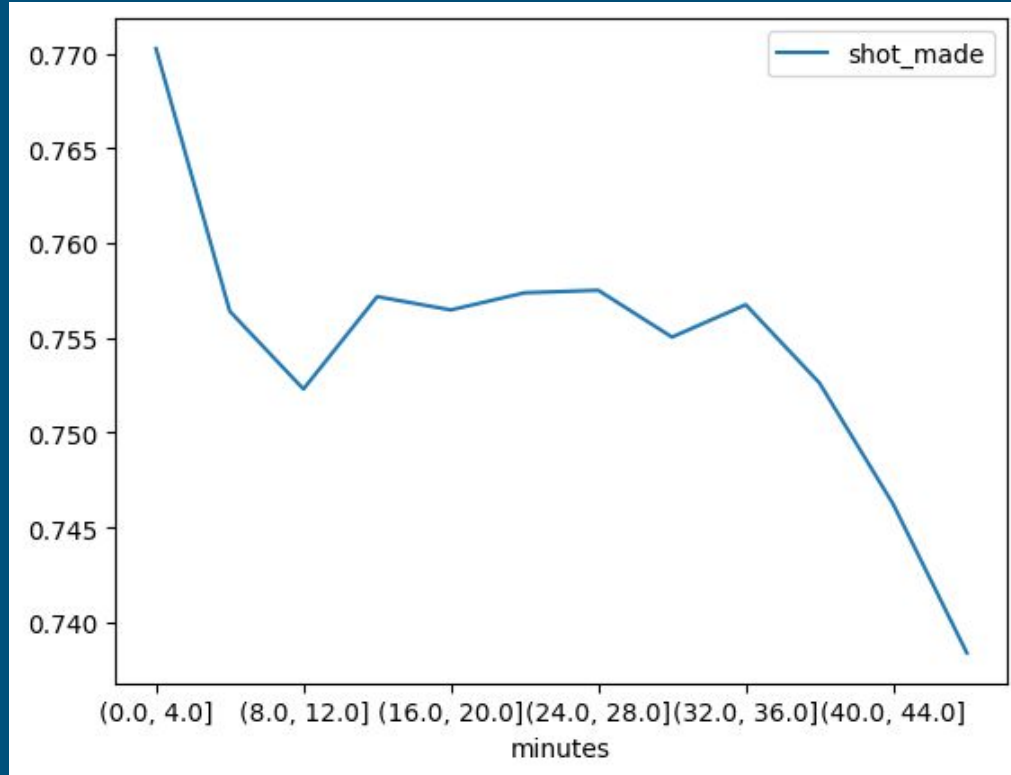


# Game Status on Free Throws

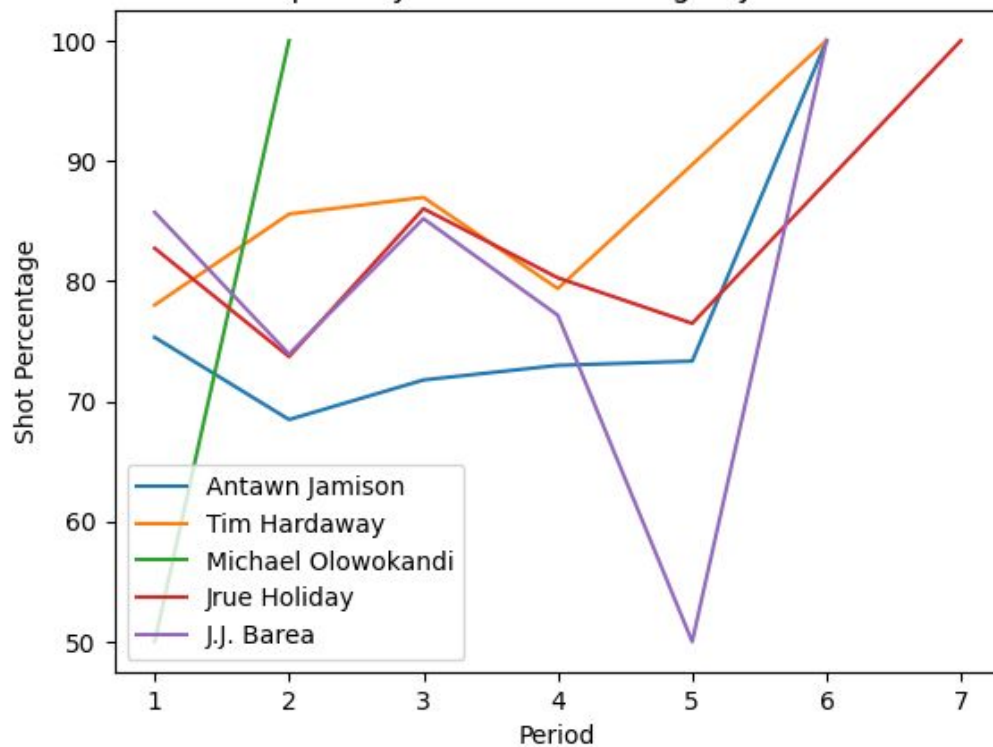


Q. What is the impact  
of how far into the  
game we are (in  
minutes) on free  
throws?

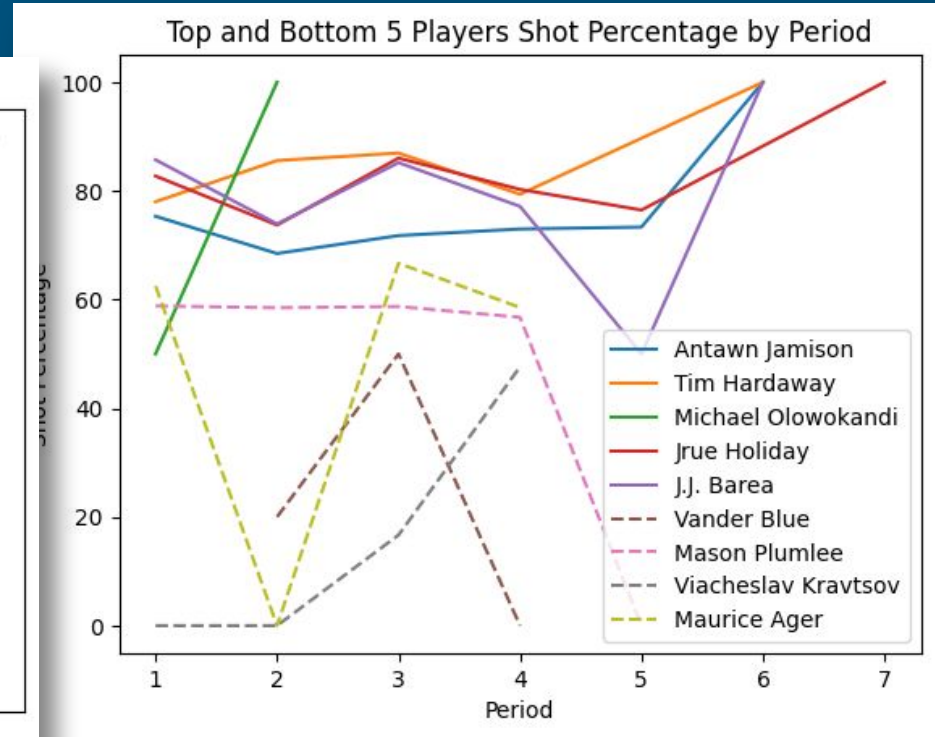
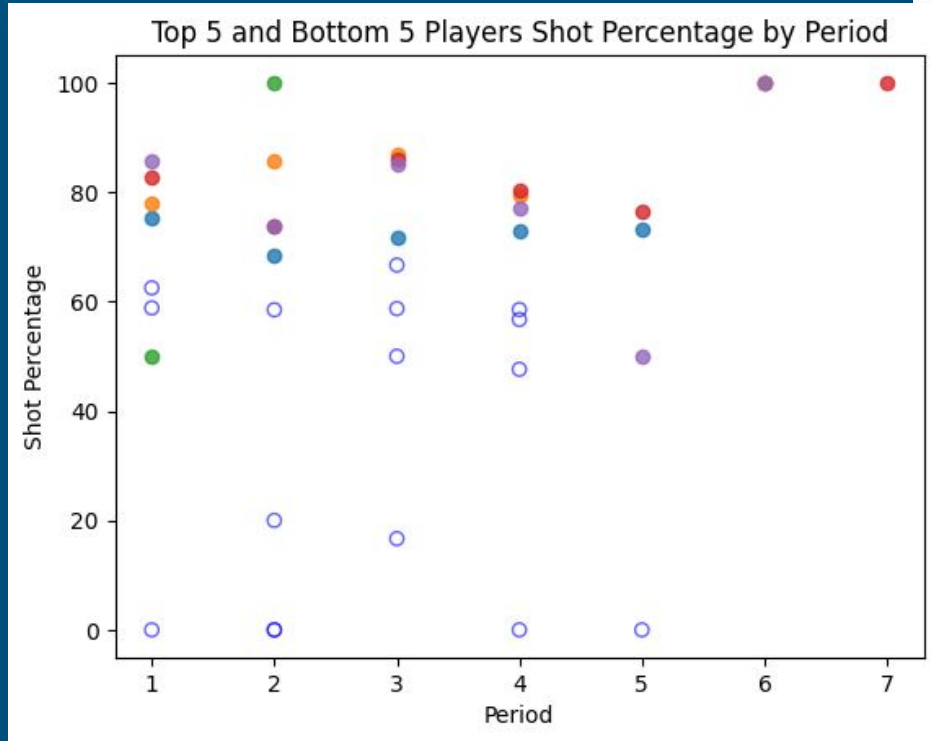
# Percentage of Shots Made vs. Time Left in Game



Top 5 Players Shot Percentage by Period



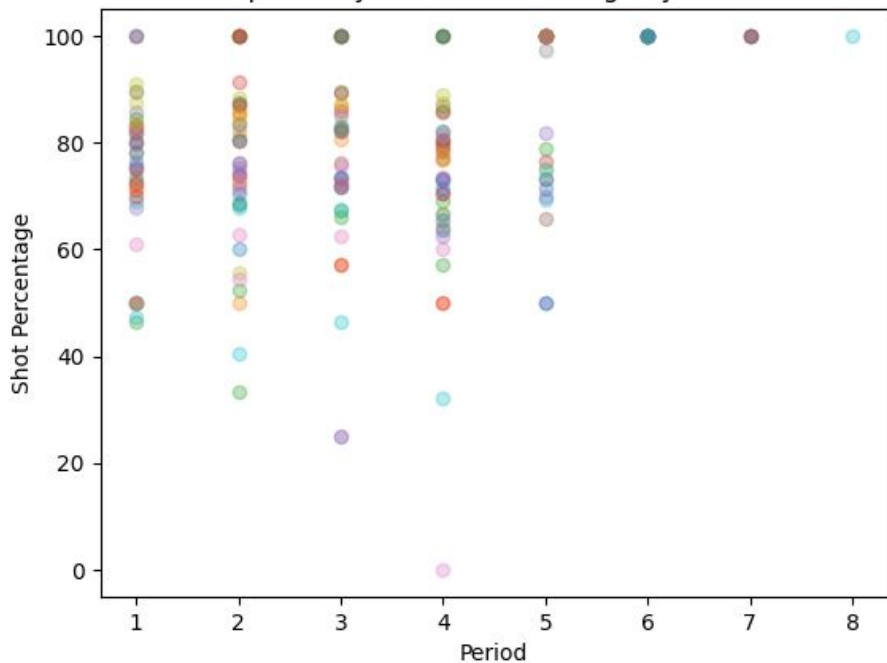
# Top 5 and bottom 5 Players Success rates



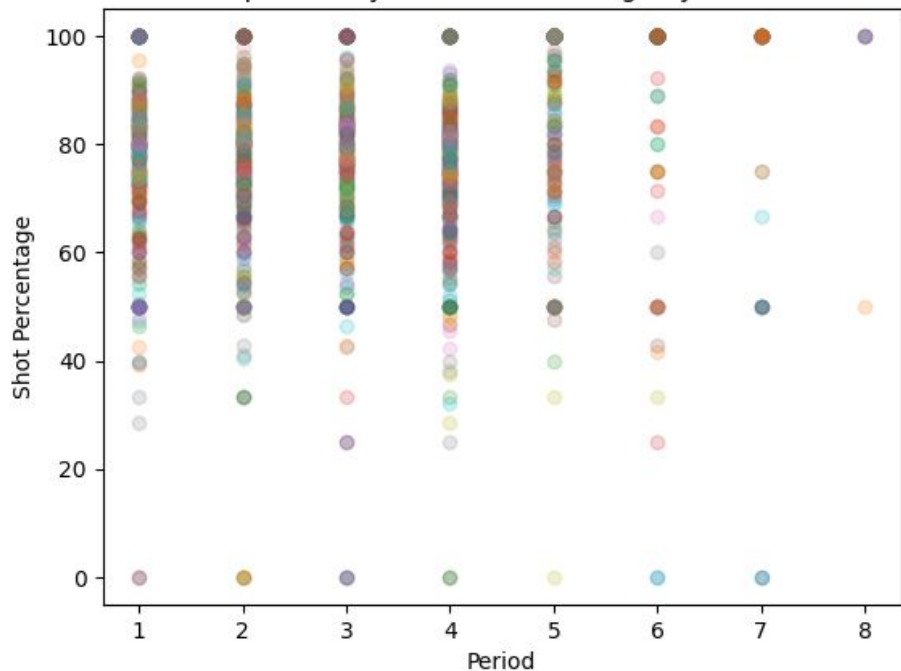


# Top Player Shot Percentages in Different Periods

Top 50 Players Shot Percentage by Period

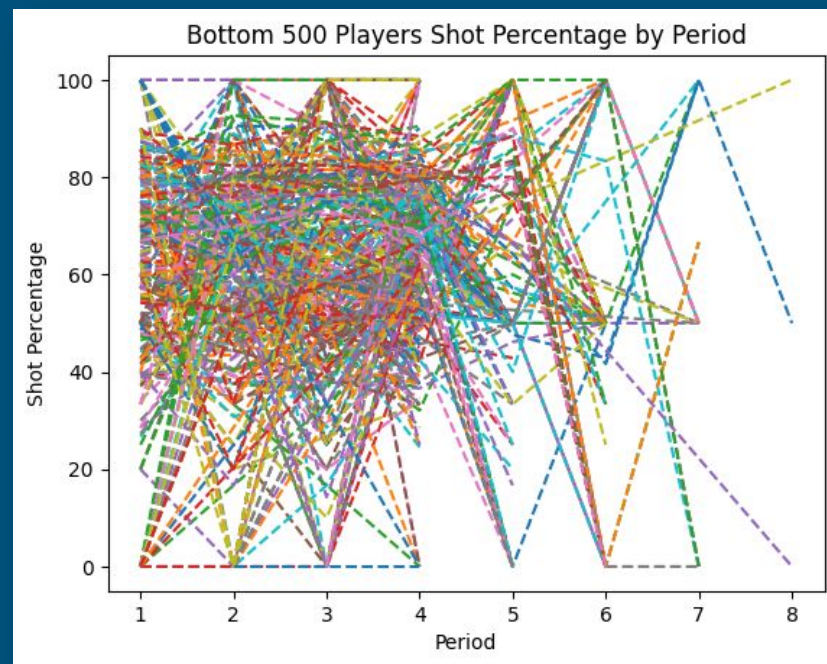
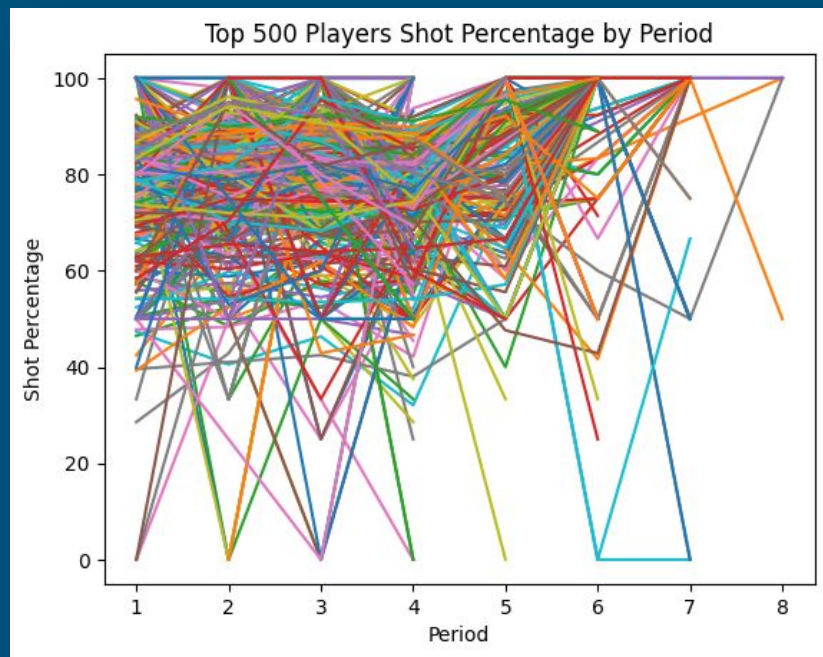


Top 500 Players Shot Percentage by Period

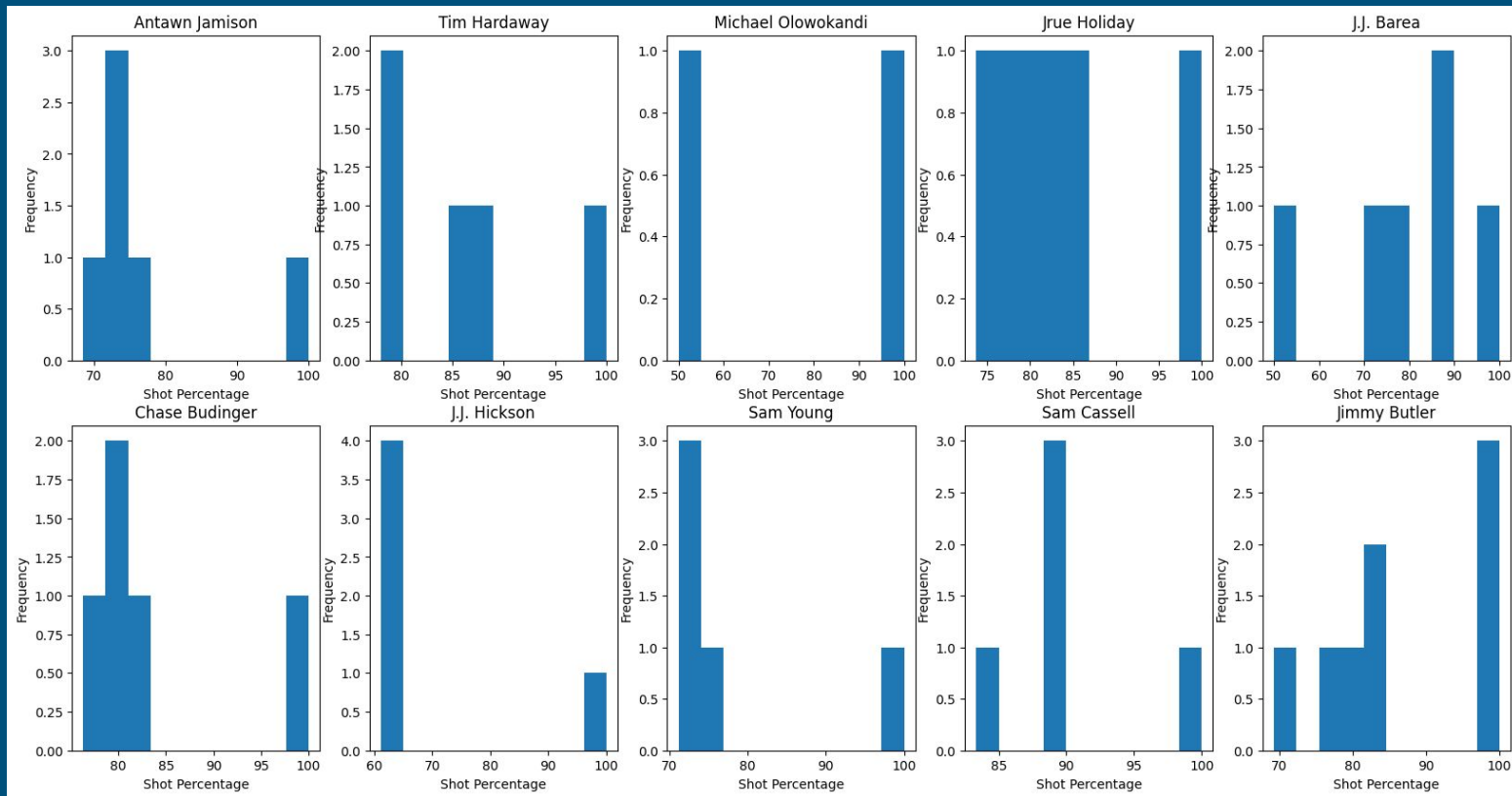


# Player Shot Percentage in Different Periods

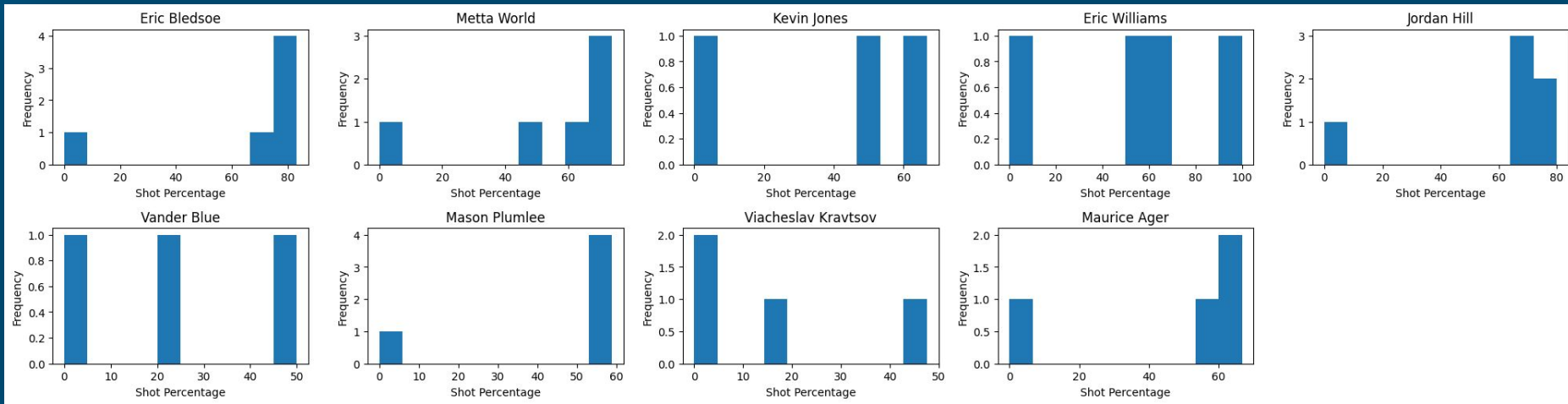
(Line graphs)



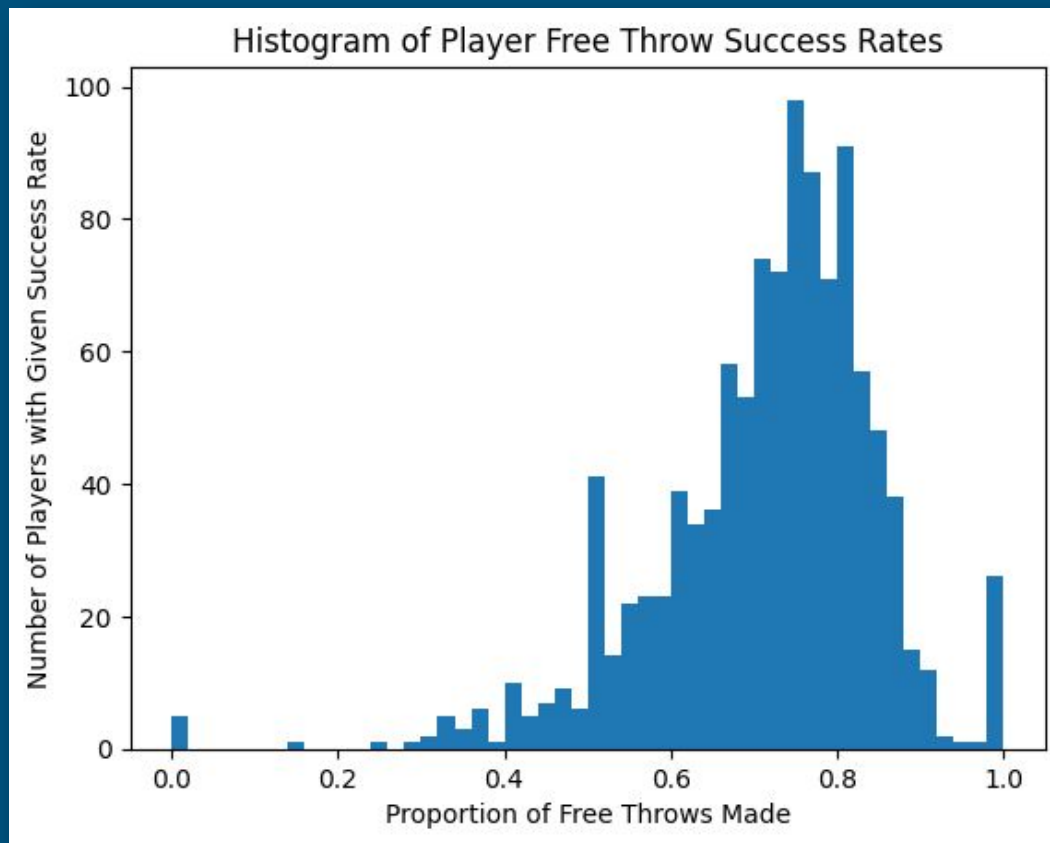
# Top 10



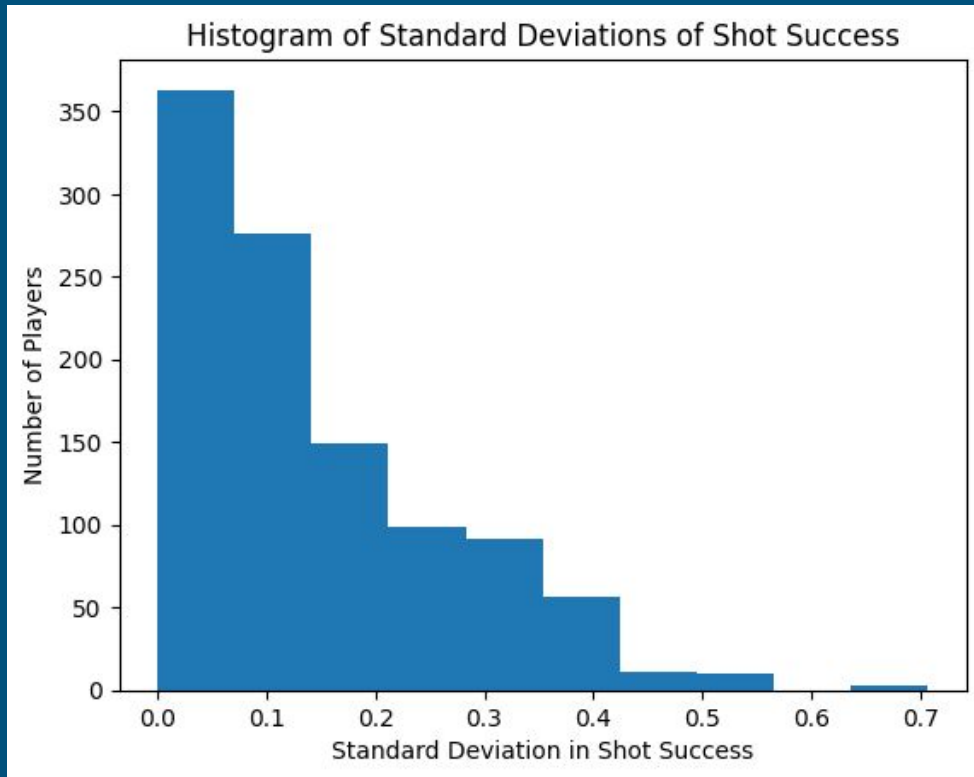
# Bottom 10



# Percentage of shots Made vs. Number of Players



# Standard Deviations of Player Success Rates



# Key Takeaways

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- Home v. Away does not impact free throw success rates
- Free throw success rates do not seem to decide the game
- Game status does not impact free throw success rates
- Player shot success clusters around 75-80% with a slight left-hand skew

Thank You