Performance Stats of NBA Rookies 1980-2020

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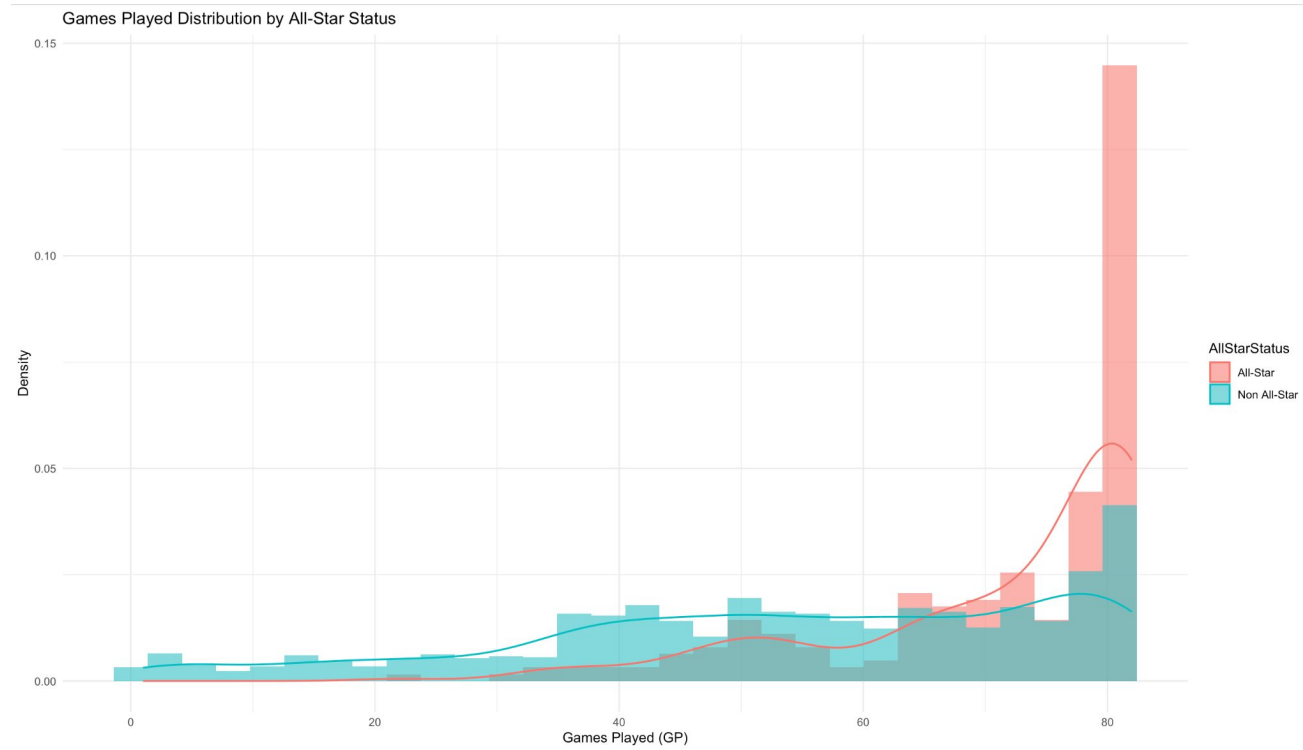
Project Goals

- Identify patterns or predictors associated with becoming a top NBA player.
- What performance statistics best differentiate all-stars from non-all-stars?
- Importance:
    - Understanding the statistical makeup of NBA rookies can provide insights for analysts and decision-makers in basketball.
    - This project uses sports analytics to evaluate how early-career performance translates to long-term success.
    - Identifying trends and patterns in rookie performance can help teams, players, and analysts understand the early signals of which rookies will become the rising stars.
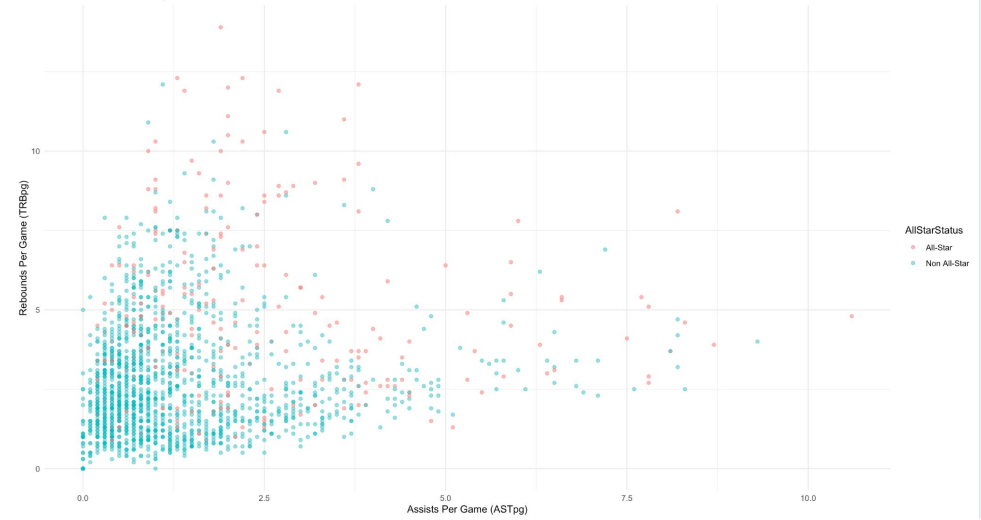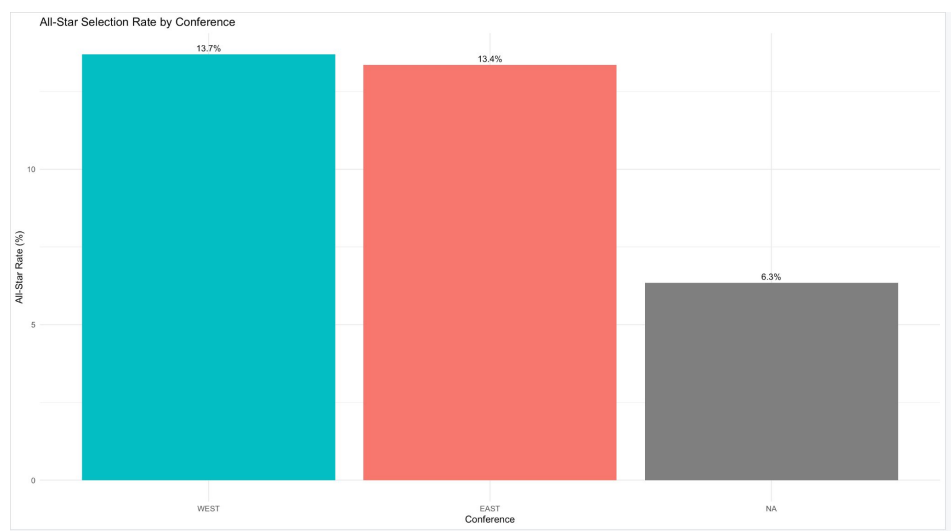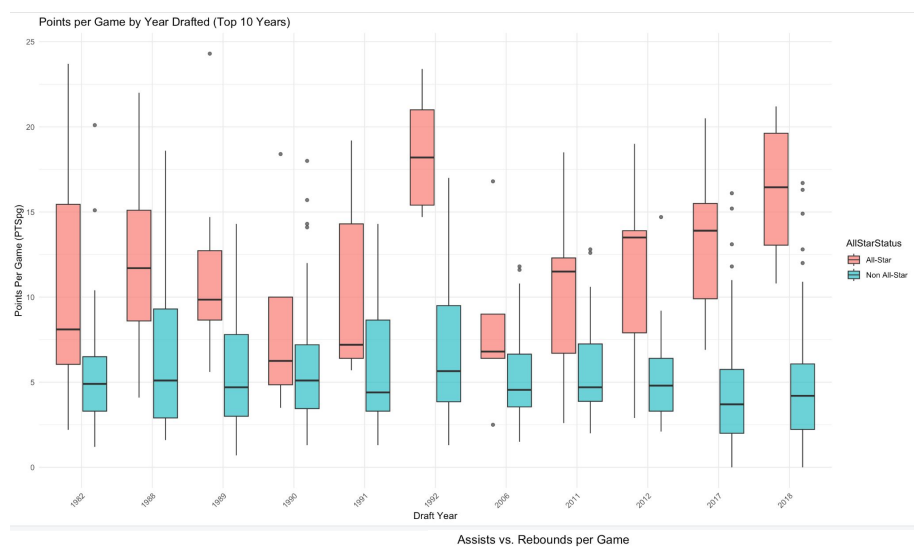
Dataset

- Source: Kaggle
  - [NBA Rookies Performance Statistics and Minutes from 1980 to 2016](#)
  - [NBA Rookies 1979-2020](#)
  - [NBA All Star Players and Stats 1980-2022](#)
- Data Cleaning
  - Check for missing values and impute or remove as necessary
  - Address duplicate values
  - Convert columns to appropriate data types
  - Feature engineering
  - Normalize player names

Name	Year Drafted	GP	MPpg	PTSpg	FGpg	FG%	3P%	FT%	ORBpg	DRBpg	TRBpg	ASTpg	STLpg	BLKpg	TOVpg	Debut Team	Conf	Age	seasons_selected_as_all_star	teams_selected_on_as_all_star	was_all_star
Luka Dončić	2018	72	32.19	21.2	7.03	0.427	0.327	0.713	1.19	6.62	7.8	6	1.07	0.35	3.43	DAL	WEST	19	2019, 2020, 2021, 2022	DAL	1
Jayson Tatum	2017	80	30.54	13.9	4.96	0.475	0.434	0.826	0.62	4.4	5	1.6	1.04	0.72	1.42	BOS	EAST	19	2019, 2020, 2021, 2022	BOS	1

Descriptive Statistics

Games Played Distribution by All-Star Status

Points per Game by Year Drafted (Top 10 Years)

All-Star Selection Rate by Conference

Assists vs. Rebounds per Game

Points vs Minutes Per Game Relationship Comparison (1980-2020)
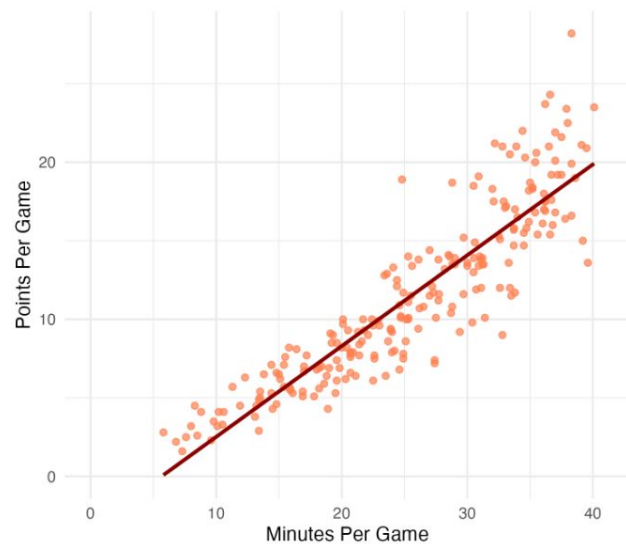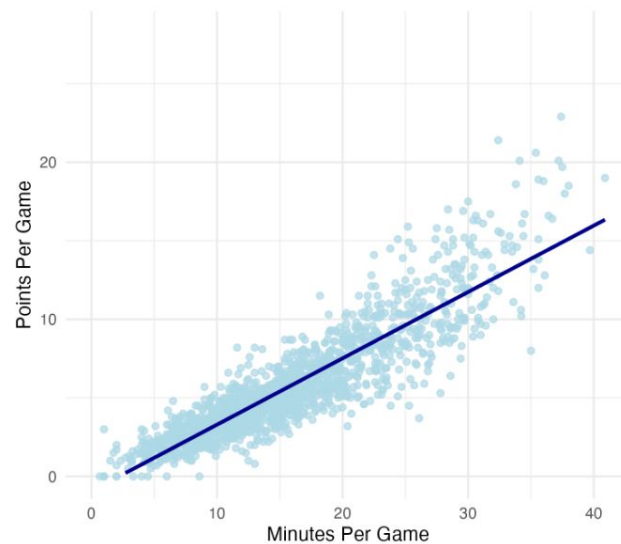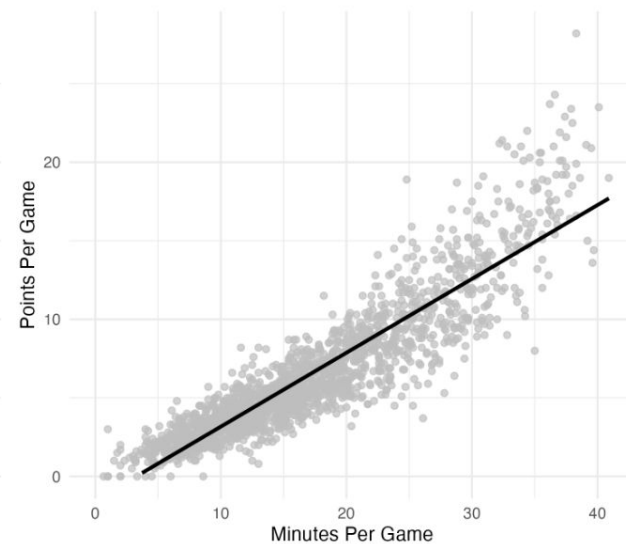
Minutes Per Game Distribution Comparison (1980-2020)
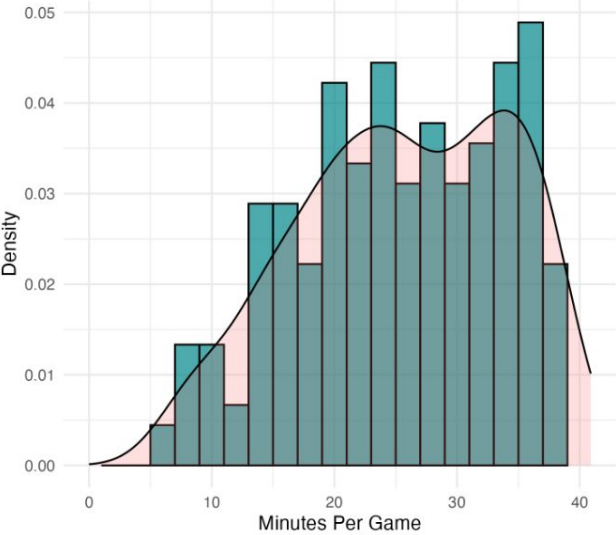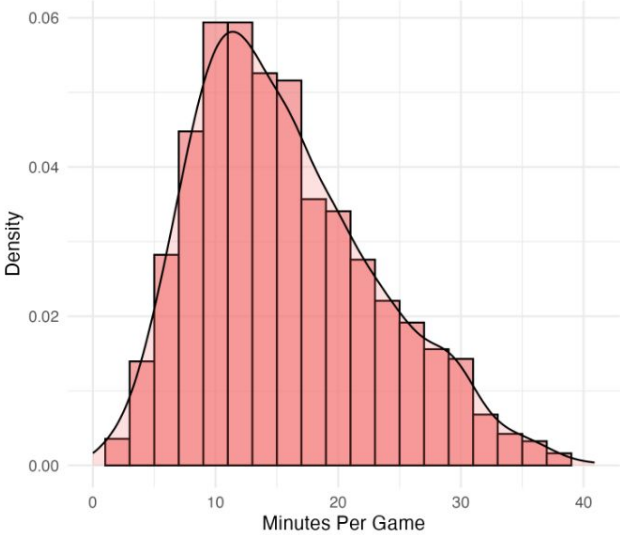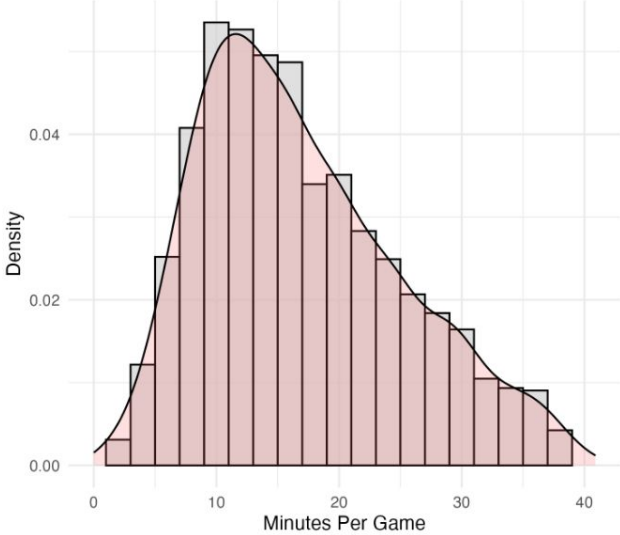
Points Per Game Distribution Comparison (1980-2020)
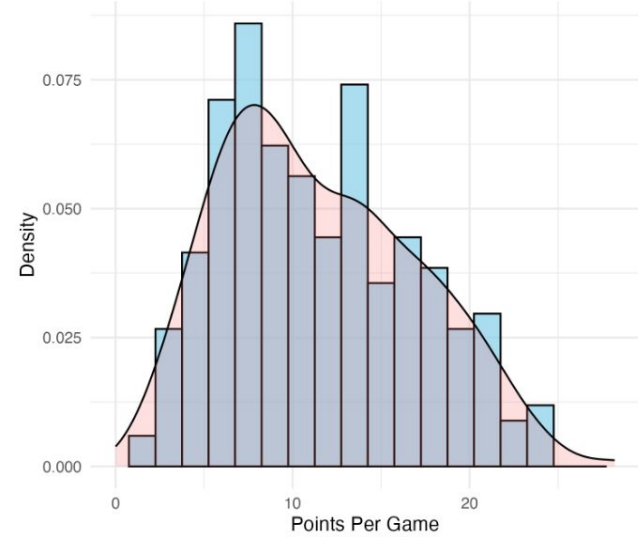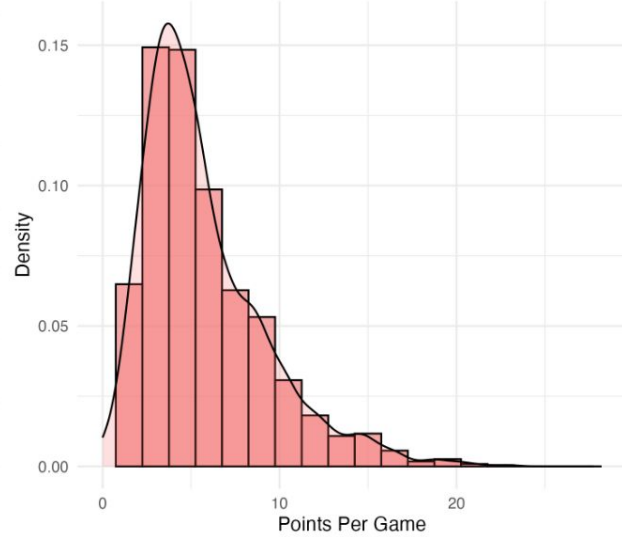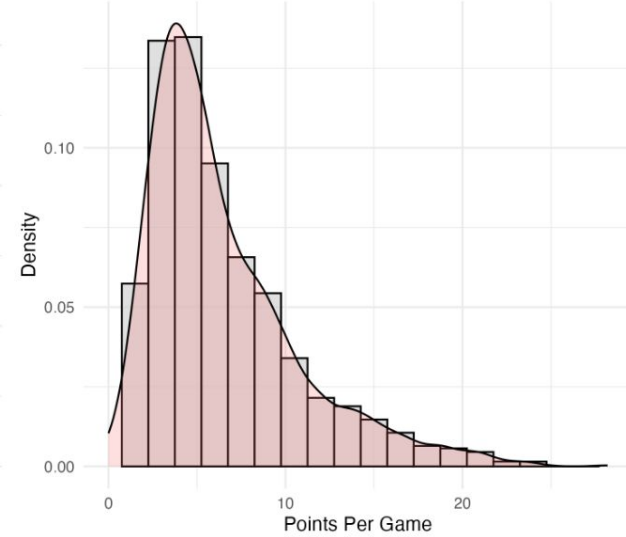
Total Rebounds Per Game Distribution Comparison (1980-2020)
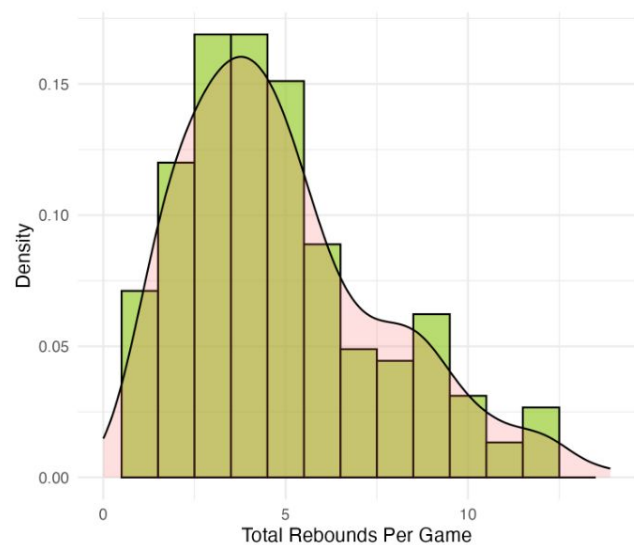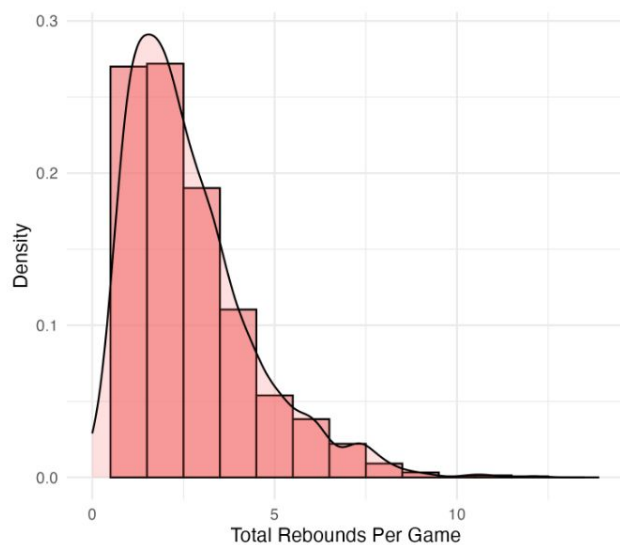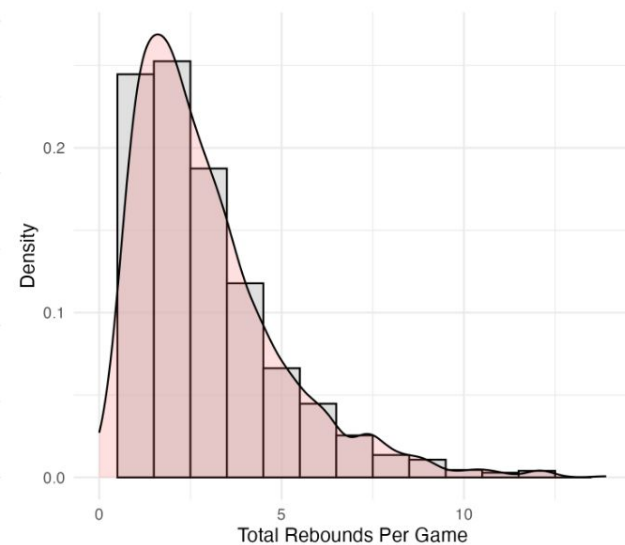
Assists Per Game Distribution Comparison (1980-2020)
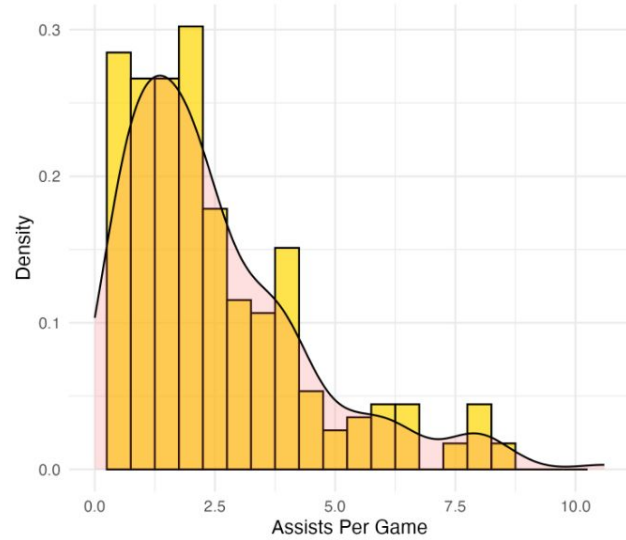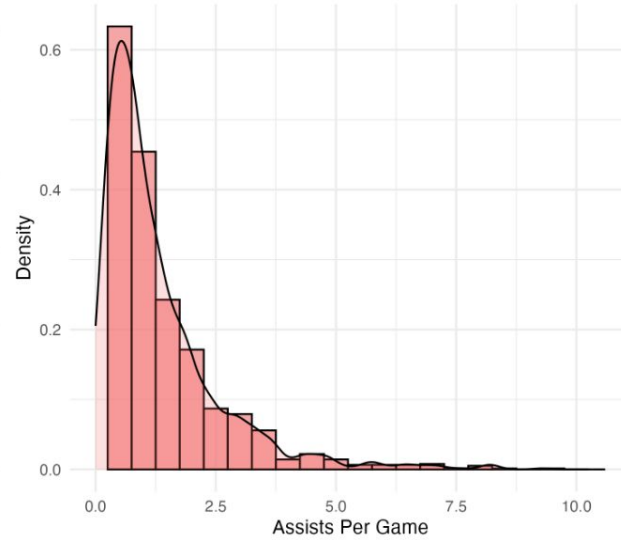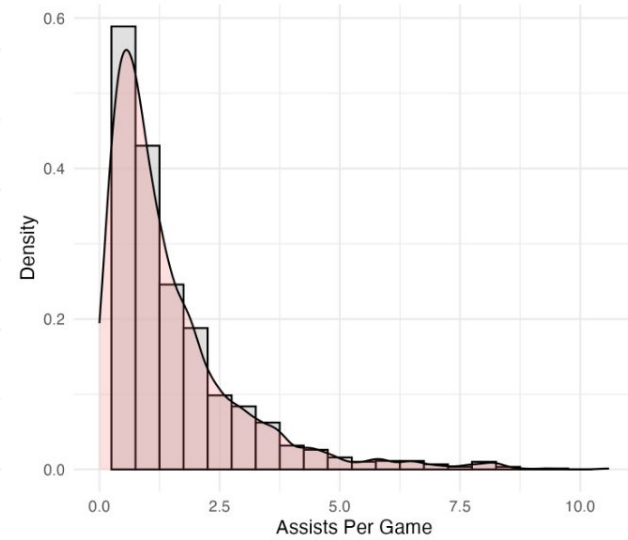
Age Distribution Comparison (1980-2020)
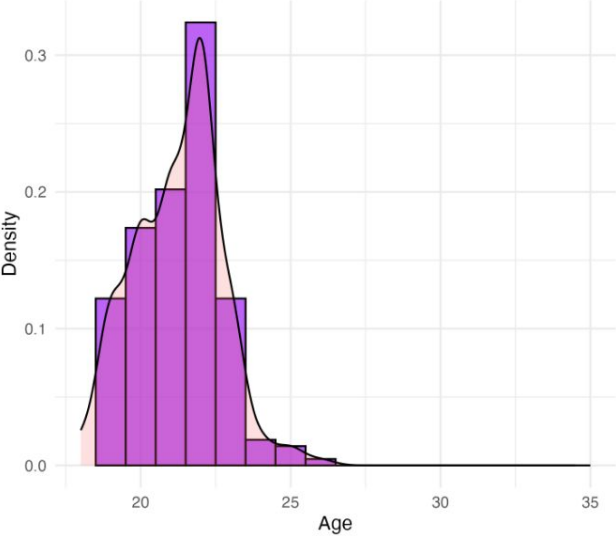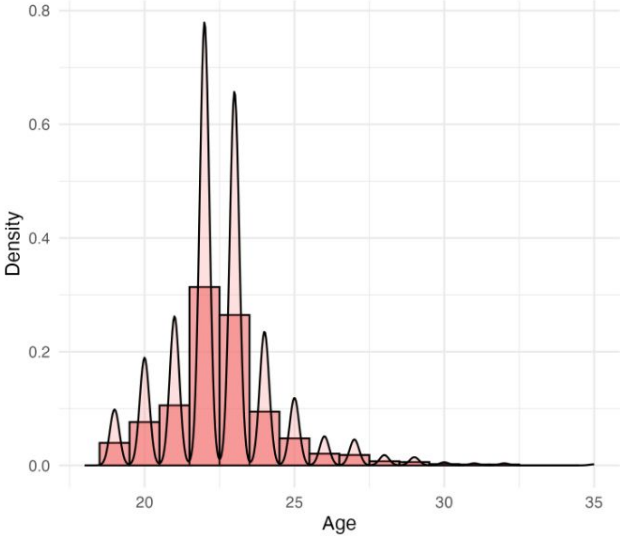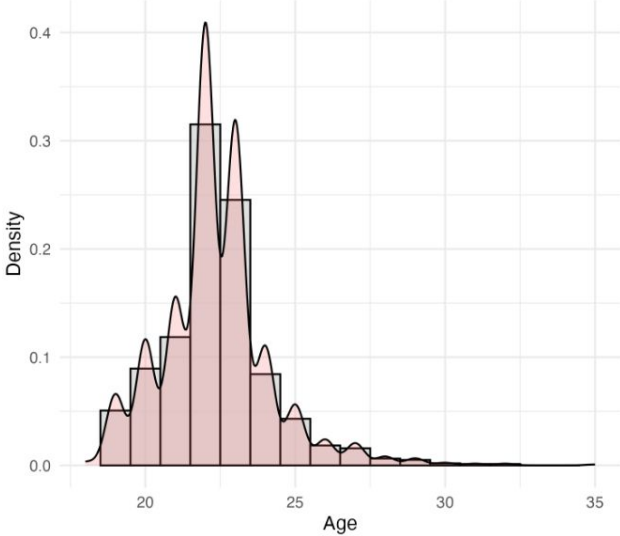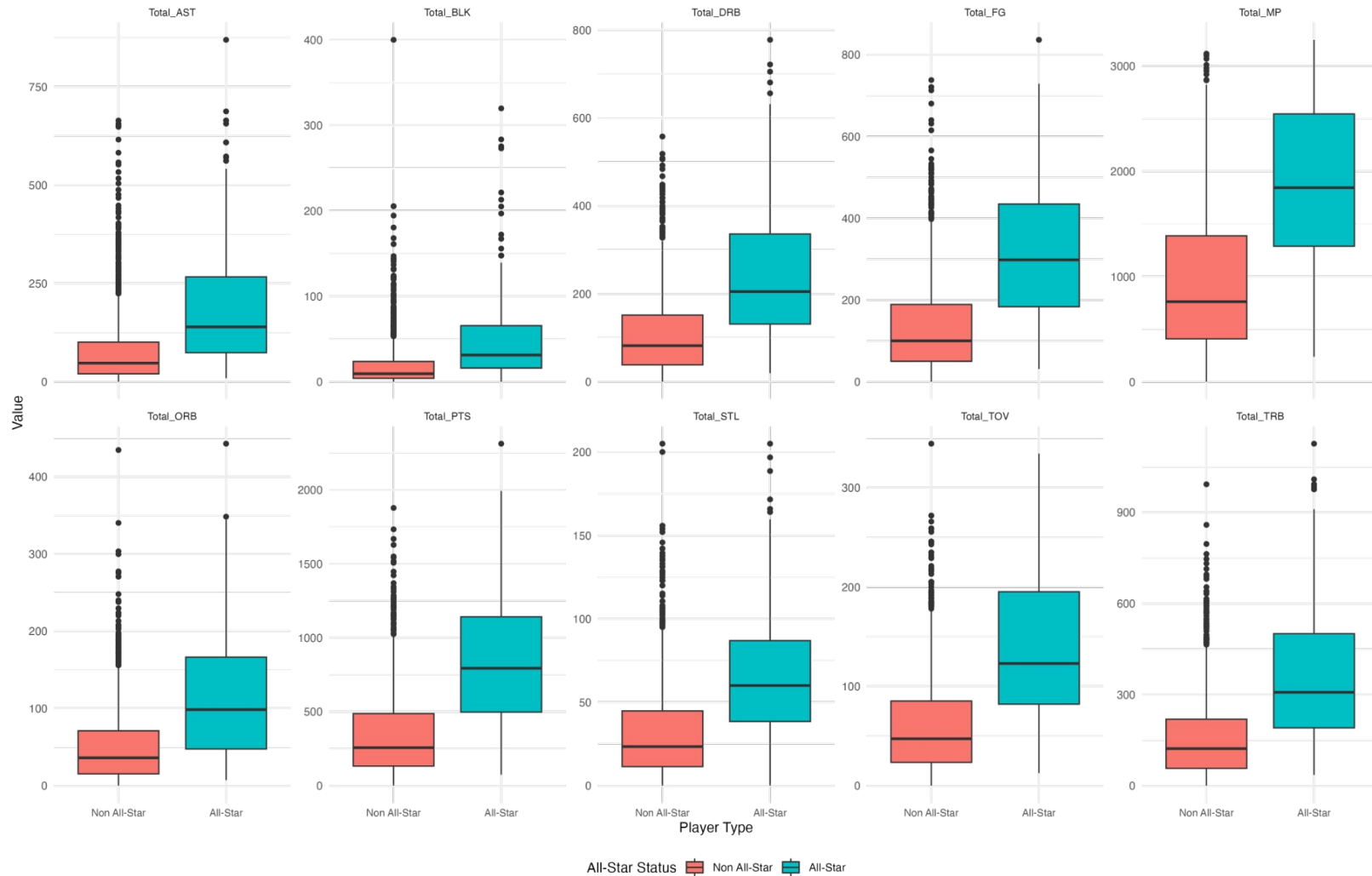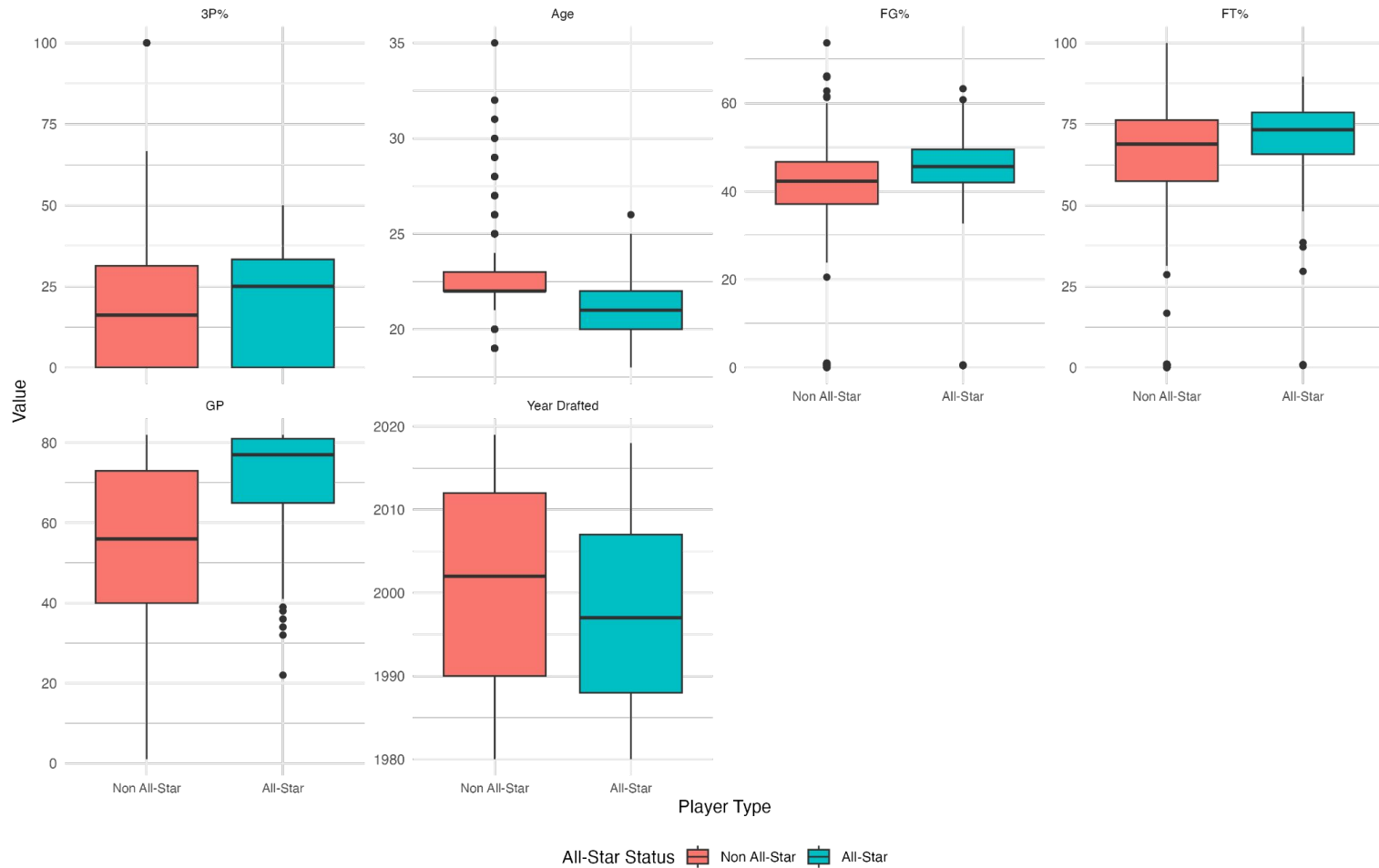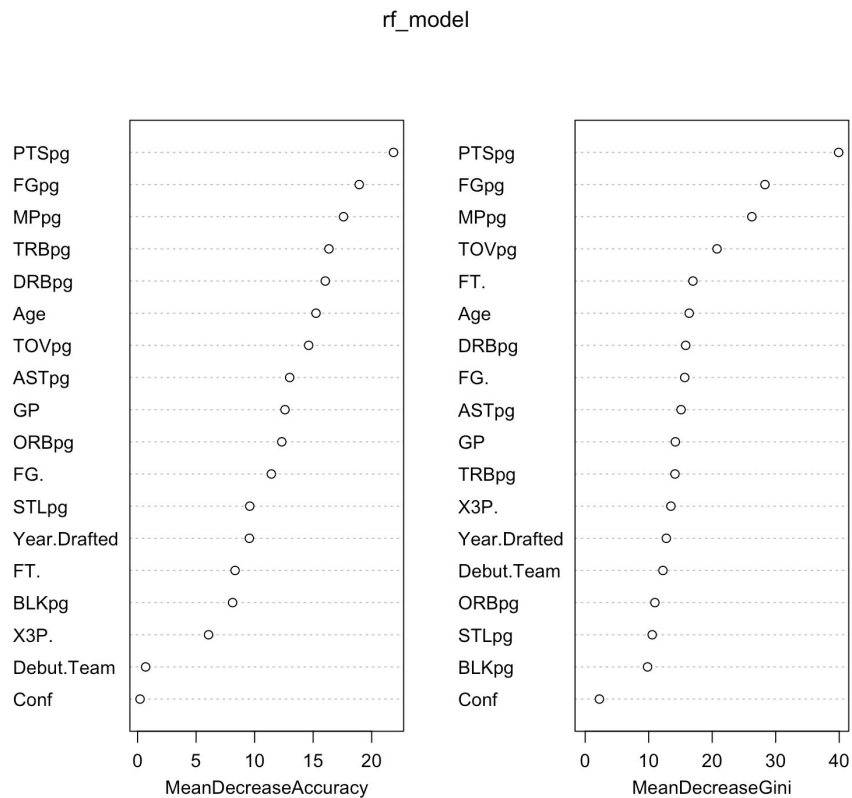
Rookie Season Stats PER GAME
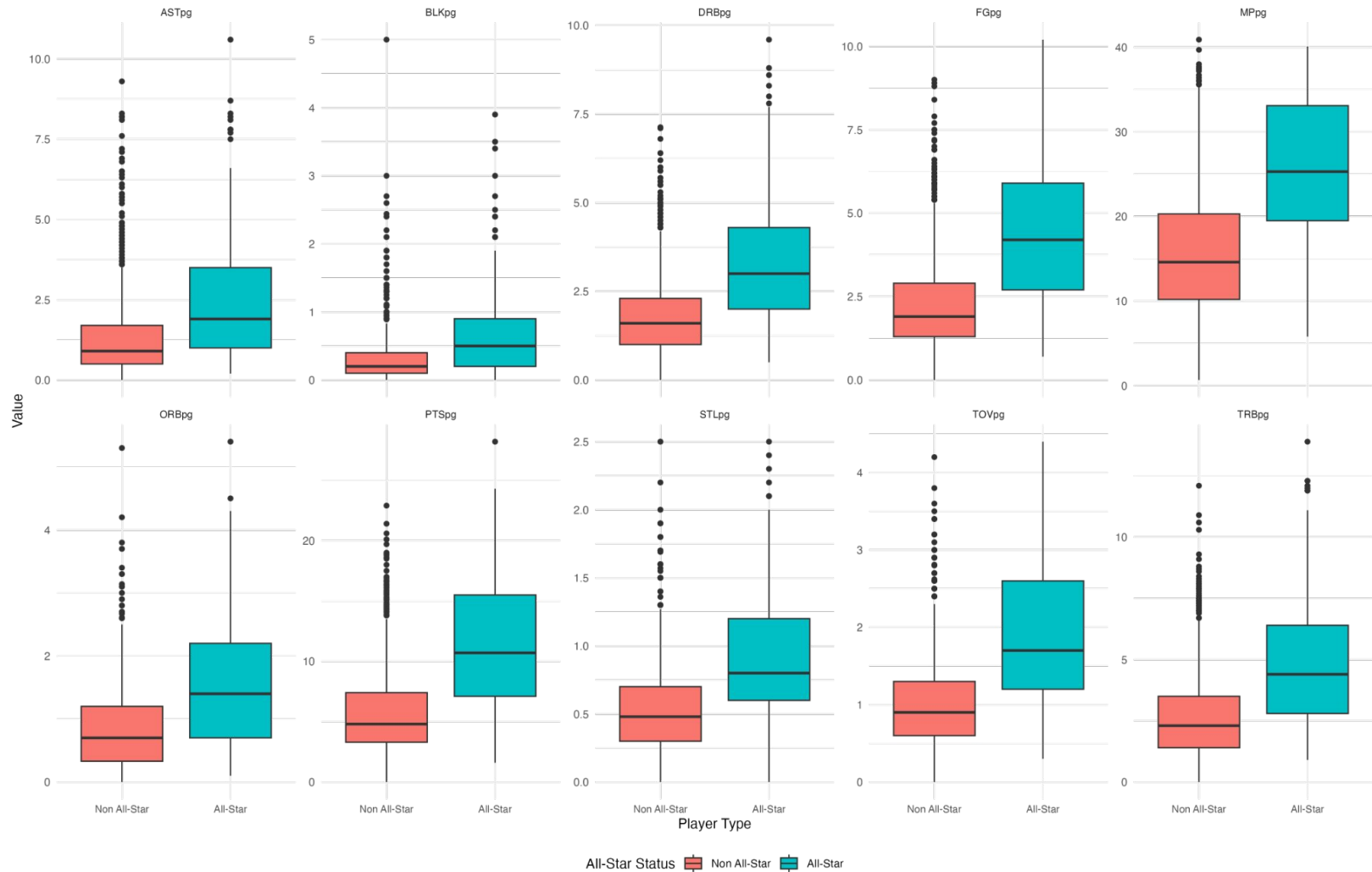
Rookie Season Player Stats TOTALS

Boxplots of Rookie Season Player Stats

What performance statistics best differentiate all-stars from non-all-stars?

rf_model

References

https://www.kaggle.com/datasets/thedevastator/nba-rookies-performance-statistics-and-minutes-p

https://www.kaggle.com/datasets/ignaciovinuales/nba-rookies-stay-longer-than-2-years

https://www.kaggle.com/datasets/ethankeyes/nba-all-star-players-and-stats-1980-2022?select=final_data.csv

Github Repo: https://github.com/kevinshi4/INFO332-Project-NBA-Rookies