# NCAA Basketball Transfer Finder

CONNECTING TEAMS AND PLAYERS TO IMPROVE CAREERS

# The Transfer Problem

- 2021 brought a new transfer rule change to major NCAA sports
  - Players can now transfer to play at a new school immediately
  - Previously players were required to sit out a year before playing at a new school
- Result: 1600 players requested to transfer in 2021, an increase of over 150% from 700 in 2020
- Problem: Coaches are now sent scrambling to evaluate thousands of players in a matter of weeks to reach out to those they want to recruit to their team for the next year
  - Players that are missed by coaches do not have access to the full range of opportunities that they should
  - Better evaluation tools are needed for coaches to quickly identify players that fit their team

# Transfer Evaluation App

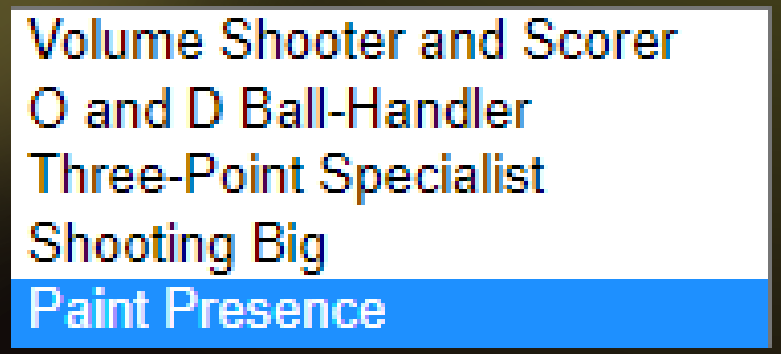
NCAA Basketball Player Transfer Evaluator

# Data

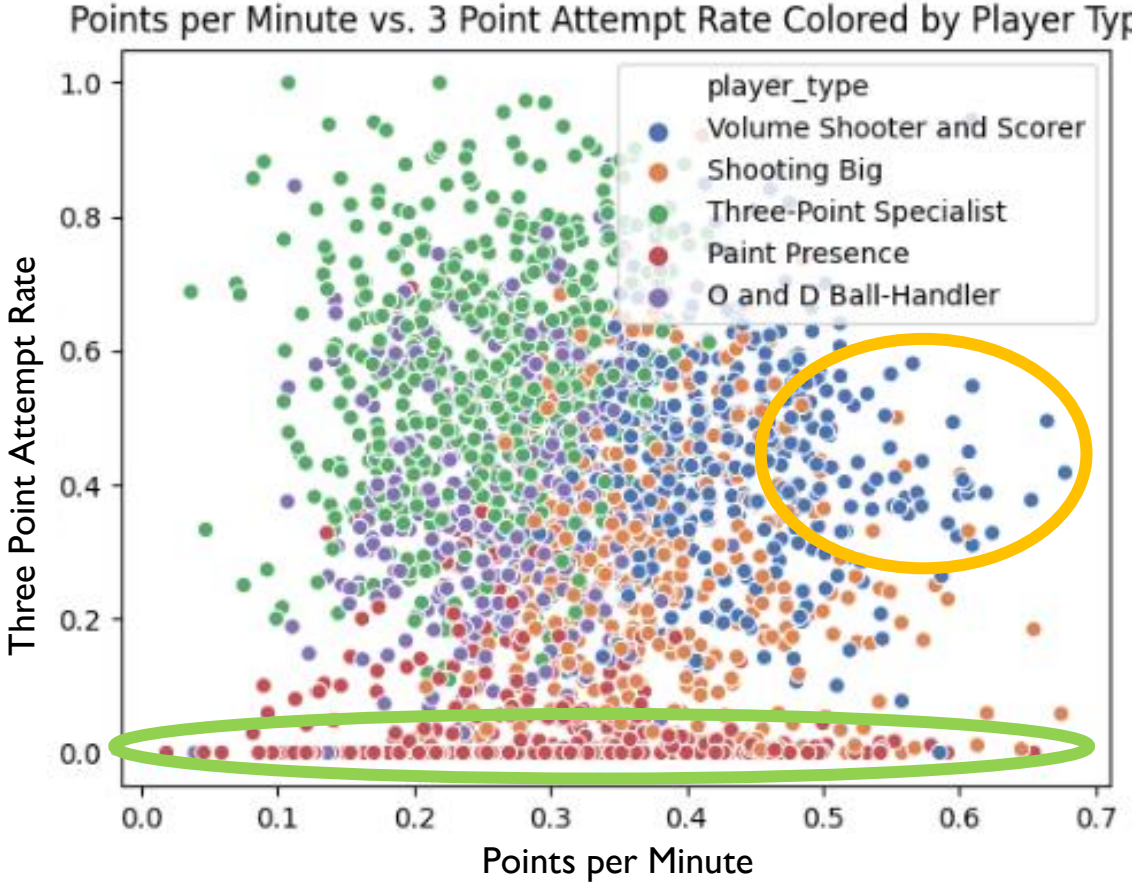
- Data was obtained from sports-reference.com using the sportsipy python package API
  - Contains raw player statistics data from the 2020-21 season for all NCAA players and teams
  - Each row is one player, columns are summary statistics for that player's stats
- Cleaning
  - Removed Seniors that are ineligible to transfer
  - Filtered out players that played less than 100 total minutes last season
  - Feature engineering to get statistics per minute

# Clustering Player Types

- Used K-Means clustering on ~10 select features to create new player types
  - Features: stats per minute, height, shooting percentages, etc.
  - Five clusters chosen
    - Metrics: within-cluster SSE, Silhouette score
    - Five players on court for each team at once
    - Able to make descriptive player type labels




- Typical player types (guard, forward, etc.) are outdated and too general
  - Every team has a unique play style
  - Descriptive player type labels helps recruit players that fit team style




# Clustering Visualized

- Clusters begin to show meaningful separation even across just two dimensions
- Want to expand on this and use GMMs as well as trying many more clusters (10-15) to see if more unique player types could be found
- Also want to generate flags where players with special traits could be found

# Thank you!

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