

1. Predicting the Success of the 2020-21 Philadelphia 76ers: How will Daryl Morey build a better basketball team in Philadelphia? (Moreyball 2.0?)

- a. Morey was the general manager of the Houston Rockets and heavily implemented analytics into training the team (Moreyball)
- b. “In the 2017-18 season the Rockets made more three-pointers than any other team in NBA history and this was a major reason they won more games than any of their rivals.”
- c. Problem Statement: This capstone aims to build a regression model with Houston Rockets data in order to predict how well the Philadelphia 76ers perform in the upcoming NBA season.
- d. Regression model?
  - i. Rockets data is training set, 76ers data is testing set
- e. Data sources
  - i. <https://www.basketball-reference.com/>
  - ii. <https://www.nba.com/rockets/stats>
  - iii. [https://www.reddit.com/r/nba/comments/58oy95/im\\_rajiv\\_maheswaran\\_ceo\\_of\\_second\\_spectrum\\_wel](https://www.reddit.com/r/nba/comments/58oy95/im_rajiv_maheswaran_ceo_of_second_spectrum_wel)
  - iv. <https://nba-py.readthedocs.io/en/latest/game/>
  - v. <https://www.nbastuffer.com/>
  - vi. [https://www.youtube.com/watch?v=oUvvhkXyOA&list=WL&index=34&ab\\_channel=TheEconomist](https://www.youtube.com/watch?v=oUvvhkXyOA&list=WL&index=34&ab_channel=TheEconomist)
  - vii. <https://digital.hbs.edu/platform-digit/submission/moreyball-the-houston-rockets-and-analytics/>

## 2. Predicting the Path and Time of a Hurricane

- a. Using a regression model to predict the possible paths of hurricanes for the next season and when they'll form
- b. Problem Statement: This capstone aims to build a regression model with past hurricane data in order to predict future hurricane paths and dates.
- c. Data sources
  - i. <https://www.nhc.noaa.gov/data/>
  - ii. <https://www.climate.gov/maps-data/dataset/historical-hurricane-tracks-gis-map-viewer>

## 3. Album Cover Classifier

- a. Using a convolutional neural network to determine the music genre of an album by its cover art
- b. Problem Statement: This capstone aims to build a convolutional neural network to determine the genre of an album by its cover art
- c. Data Sources
  - i. <https://archive.org/details/coverartarchive&tab=collection>
  - ii. <https://coverartarchive.org/>
  - iii. <https://www.cs.ubc.ca/~davet/music/covers/index.html>