

# Visualizing NBA teams across multiple seasons

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## ABSTRACT

This paper details the conceptualization and implementation of an interactive visualization of data about NBA seasons including teams, game results and player statistics. The d3.js framework was used to develop this visualization.

## ACM Classification Keywords

H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous; See <http://acm.org/about/class/1998/> for the full list of ACM classifiers. This section is required.

## Author Keywords

Authors' choice; of terms; separated; by semicolons; include commas, within terms only; required.

## INTRODUCTION

This paper describes the visualization of NBA data made by the “The Tufters” team for the course “Information Visualization”. In section ?? we describe the goal of the visualization and the target audience. In section ?? we describe the data used, including its origins, advantages and limitations. In section ?? we give an overview of related literature and web resources, including related visualizations. Related visualizations include both visualizations of NBA or other sports data, as well as visualizations tackling a problem we encountered during the development of our visualization. In section ?? we describe the visualization itself. We give an overview of the different stages of development of the visualization, as well as the major design decisions made during the development process. Section ?? discusses potential improvements of the final visualization and lessons learned from the project. We conclude in section ?? by giving a short overview.

## GOAL AND TARGET AUDIENCE

?? The visualization’s goal is allowing exploration of NBA data by lay persons. More specifically, the visualization does not try to offer premade explanations for phenomena visible in the NBA data. By providing easy and intuitive access to the data, users can draw their own conclusions. Secondly, the visualization’s target audience are lay persons. This means people

not professionally active in the field of basketball. Specifically, fans of NBA are the core of our target audience. This means the visualization assumes most common basketball terms are known to the audience and as such does not provide additional information about them.

## DATA

?? The data visualized is a subset of the data available on basketball statistics site basketball-reference[?]. A wide range of data is available on this site. In our visualization we only use data from 1984 onwards. The data we use includes league standings and playoff rankings for each team, the team’s roster and individual player statistics for each year, including the PER (Player Efficiency Rating).

The data was gathered by scraping the basketball-reference site, mostly using the provided download capabilities. Most of the data was downloaded in csv format, while some tables had to be manually scraped. The data was then combined in a preprocessing step. In this step, each team’s playoff rankings were calculated based on the matches played during the playoffs, and the rest of the data was combined into json format. The final preprocessing step combines all data into one json file.

## RELATED WORK

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## VISUALIZATION

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### Technology

To create the visualization, the d3 javascript framework [?] was used in combination with html5 [?] and jquery [?]. This allows easy access to the visualization as most modern browsers are capable of handling these technologies. The choice not to use the d3 framework for the entire visualization was made to ease the layout configuration of the visualization. Instead, html was used to do the global layout of the visualization.

## DISCUSSION

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## CONCLUSION

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