

Tennis

FOR
DUMMIES

COM-480 Milestone 2 - Tennis for Dummies (band_data)

Main goal: we want to create a website that provides interesting tennis insights for both tennis newbies and tennis lovers. Our website will be split into 3 distinct sections.

To build the website, we will use Tailwind CSS for styling, Chart.js and D3.js for charts and maps, Grid.js for tables, GSAP for animations. We will leverage lectures from Weeks 2-5 for JS, D3.js and interaction, and Week 11 (Tabular Data) for charts.

1. Introduction to tennis

We aim to provide an introduction about the key aspects, terms, and rules of tennis such as the different kinds of serves, how the scoring system works, and the different types of tournaments. While this part of the website is mostly text based for now, we might visually enhance it by having a visualization of a tennis court such that clicking on different places of the court opens a panel that provides an explanation for the given aspect e.g. points system.

2. Trends and Overviews

This section will give users a glimpse into the history of tennis. The user can choose if he wants an overview with the top 100 wta (women) players, the top 100 atp (men) players, or an overview with all the top 100 players. A table shows all selected players and their ranking. First, we want to include the trend of the following attributes over time for the top 100 players using line plots of averages with standard deviation (1): player height, age when they win their first big tournament, retirement age (estimated by the age of the last recorded match). Choosing which attribute to visualize would be part of a dropdown.

Then, using a world map where countries are represented as bubbles (2), we want to show which countries produce the most players in the top 100, where country size is scaled by the ratio (# players in top 100 / total # players from this country). To enhance the visualization, we might incorporate an interaction element such that zooming into a country would display the player names, with a link to their player profile (see below).

Using parallel coordinate plots (3), we want to display key playing style statistics for the top 100 players e.g., average percentage of aces, first serve wins, etc. Since such statistics vary based on court surface, we would include a plot for each of the 4 surfaces.

3. Find your Player

This section provides the opportunity for users to either (1) get the profile of a player of their choice by inputting the name directly, or (2) select different player characteristics such as nationality, gender, decade etc. and obtain the top-3 players that fit them and the corresponding profiles. The player profile would be opened in a different page and

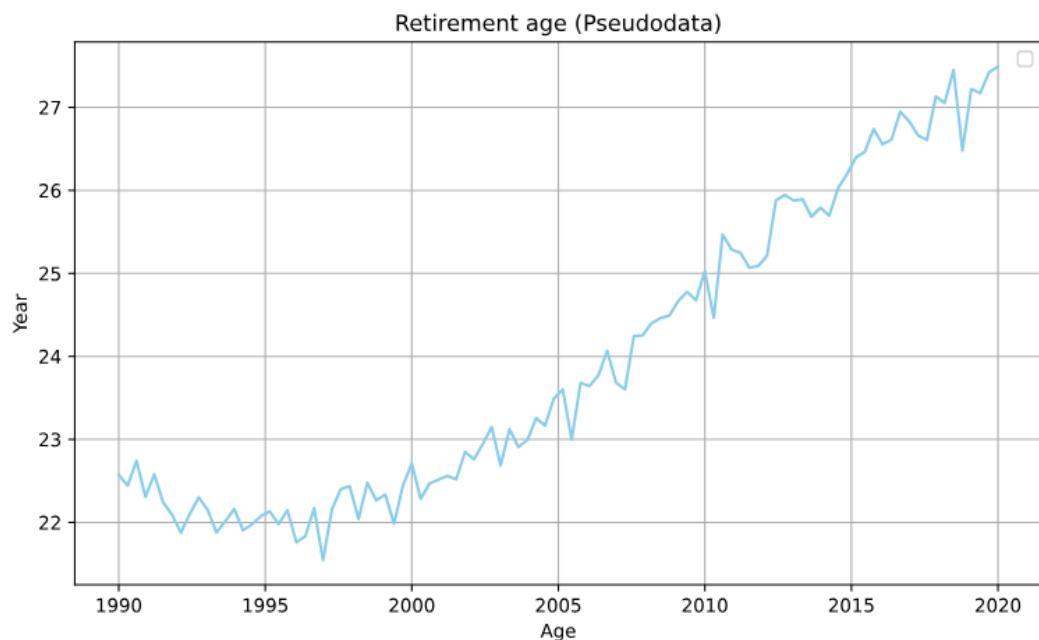
contain key information about the player such as the percentage of games won, number of titles, and physical attributes. In addition, through visualizations, we aim to show (1) an overview of the player's career by showing the number of games won per tournament level (e.g. Grand Slam, Masters, etc) and as well as the evolution of the player's rank in ATP/WTA rankings; (2) an overview of key playing style statistics e.g. percentage of aces; (3) a portion breakdown of matches won by court surface, tournament level, tournament name; (4) who are the biggest rivals of the current player, with a distinction per court surface, such that clicking on the rival's bubble opens the corresponding player profile.

We could enhance the player profiles by including a picture of the player. This would require scraping pictures from somewhere, which might prove difficult since we consider many male and female players from ATP and WTA matches since 1990.

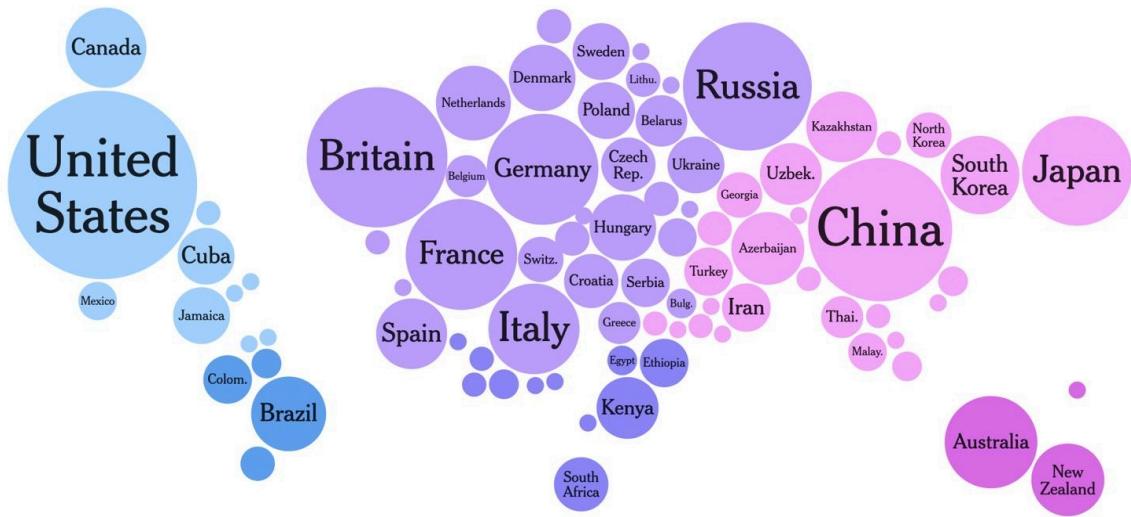
Sketchbook

2. Trends & Overviews

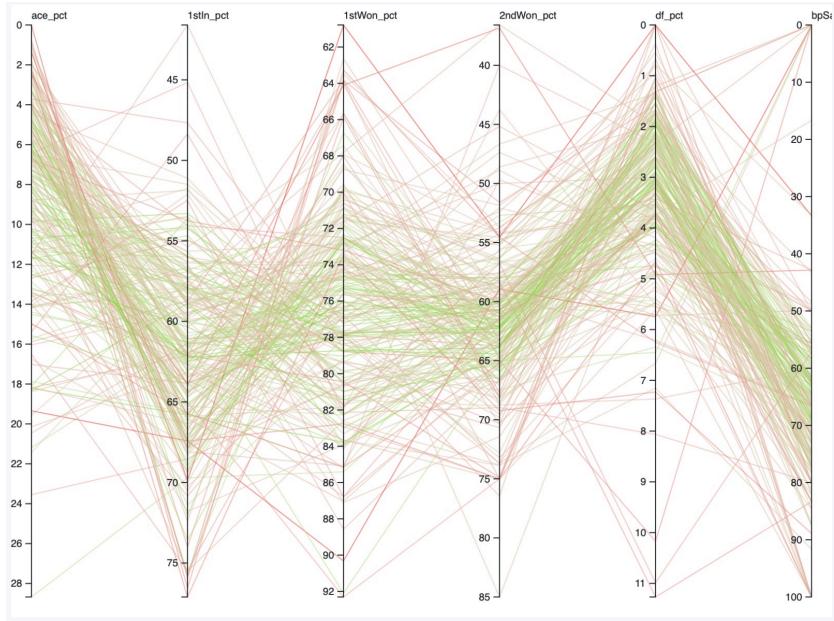
(1) Trends over time



(2) Map

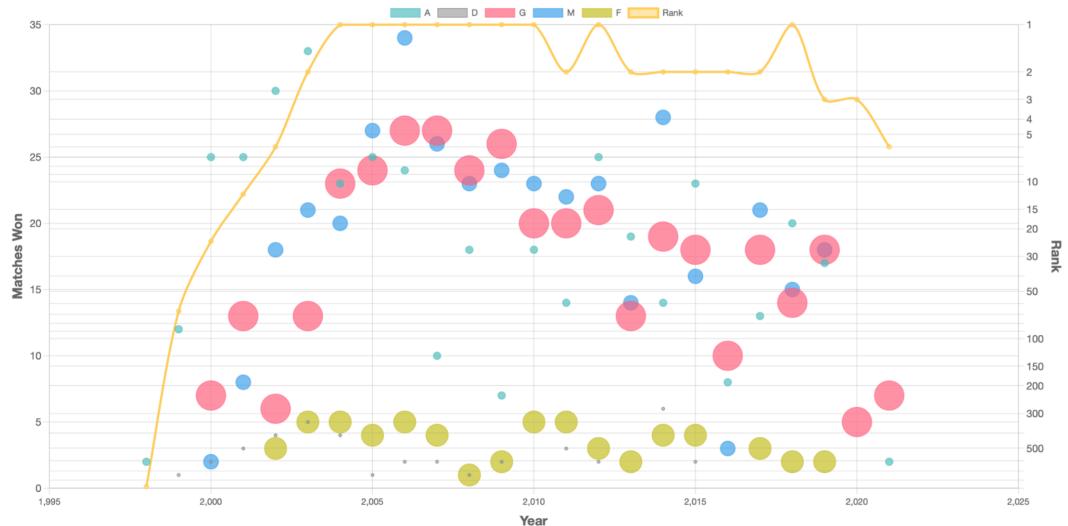


(3) Statistics by tournament level or court surface, over time

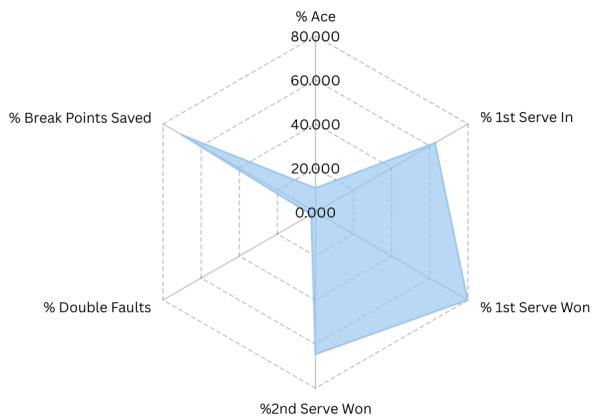


3. Player Profile

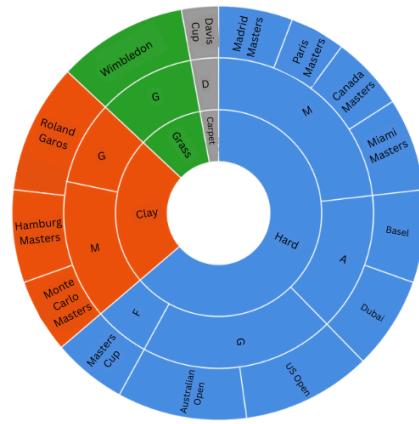
(1) Career overview:



(2) Main statistics



(3) Match proportion breakdown



(4) Rivals by surface

