

## CSE 578: Data Visualization

### Assignment 1

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According to the data of 10 years Professional Tennis Australian Open Championship matches statistics, winner(player1) vs runner-up(player2). **I took this opportunity to explore data related to Novak Djokovic win's.**

From the period of 2011-2019, he won six Australian Open finals (2011,2012,2013,2015,2016,2019). And now 2020 also!!

He had an injury in 2013, so I decided to compare his growth before and after injury. I took average of 3 years (i.e 2011,2012 and 2013) and compared with the rest win years.

Rather than representing data in regular bar chart, I **used Radar Chart**. The design decision was to observe the overlaps in the chart, because overlaps marks consistency in performance. I selected few attributes of the dataset to compare the performance difference like **First Serve, First Serve Points won, Second Serve Point won, Break Points won, and Return Points won**. All these values are in percentages (%).

**Regarding the color:** I used basic color for better visualization and introduced opacity so that the overlap region is visible. The curves were made smooth to observe the flow.

**Some of the observations can be made from the graph:**

**First Serve (%):** It is the only shot in tennis that doesn't count against you if you miss it. But converting this chance to win points is important. After injury, Novak initially struggled with first serve but later improved it exceptionally.

**First Serve Points won(%):** The percentage of the points where the player successfully made the first service and won it. As this parameter depends on first serve, the same trend is observed in First Serve points won.

**Second Serve Point won(%):** The second serve percentage is hit when a player misses the first serve, leaving them one chance to hit a serve before a double fault is given. Novak is consistent with second serving points win except in 2016.

**Break Points won(%):** Converting a break-point situation in which one more point is needed to break the opponent's serve to a successful point. Novak is improving with break points except in 2015.

**Return Points won(%):** The number of points you won when your opponent was serving. Novak is consistent with return points win.

**Conclusion:** I know there are multiple factors in deciding the match winner like ace points etc.

But from the graph and data analysis, it can be deduced as Novak improved his performance by hitting first serve legally and scoring points to win and keeping consistency in other departments.