

Kobe Bryant's Shot Data Visualization

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Figure 1 : Wordcloud generator

Figure 1 highlights key keywords from Kobe Bryant's shots, with word size indicating frequency. Dominant terms like "Jump Shot" and "Mid-Range" emphasize his scoring strengths. This concise visualization provides a quick overview of his shooting tendencies and key areas of excellence.

Kobe Bryant - All Career Shots

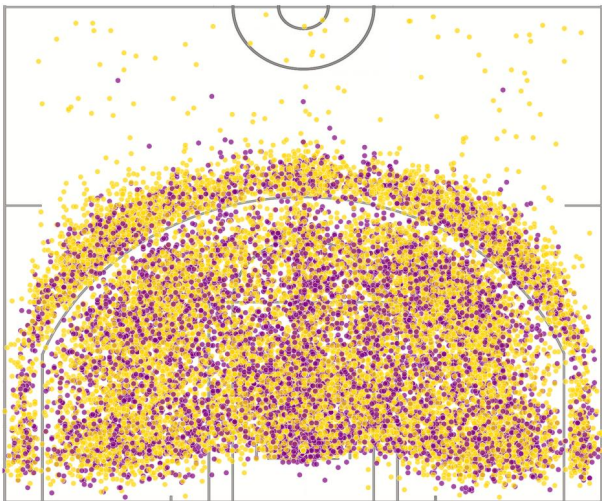


Figure 2 : All Career Shots

Kobe Bryant - All Career Shots by Shot Type

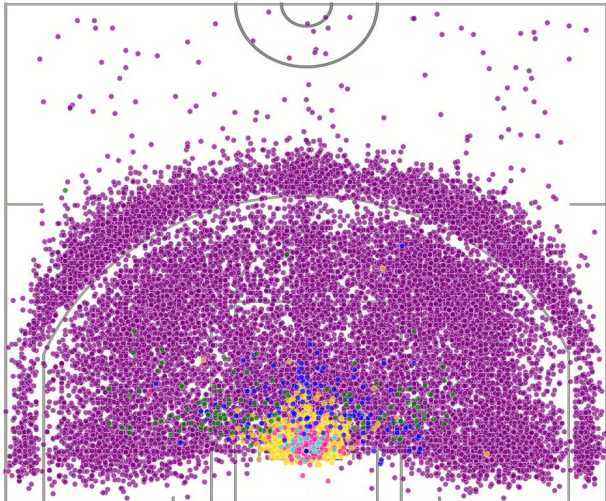


Figure 3 : All Career Shots by Shot Type

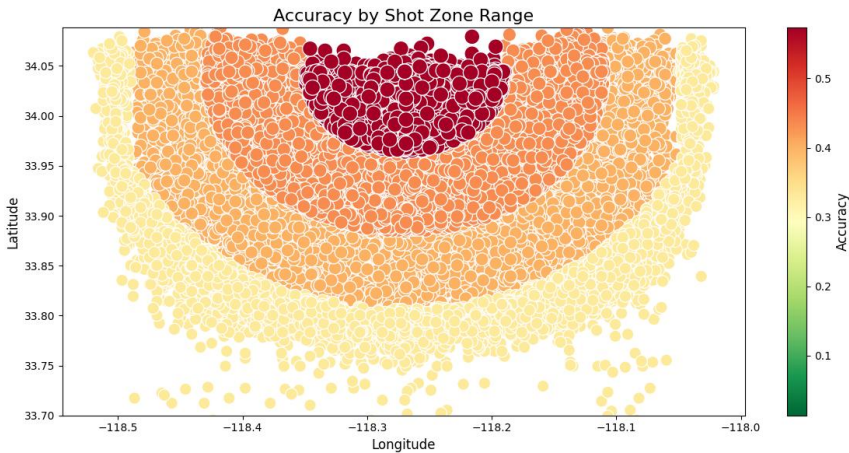


Figure 4: Accuracy by Shot Zone Range

Figures 2, 3, and 4 illustrate Kobe Bryant's shot tendencies and efficiency. Figure 2 shows all 30,699 career shots, with purple and gold representing makes and misses, emphasizing his versatility across the court. Figure 3 categorizes shots by type, highlighting Kobe's mastery of jump shots, layups, and bank shots. Figure 4 visualizes accuracy by zone, with darker colors showing higher precision, particularly in mid-range areas. Together, these figures provide a comprehensive spatial and analytical view of Kobe's scoring ability.

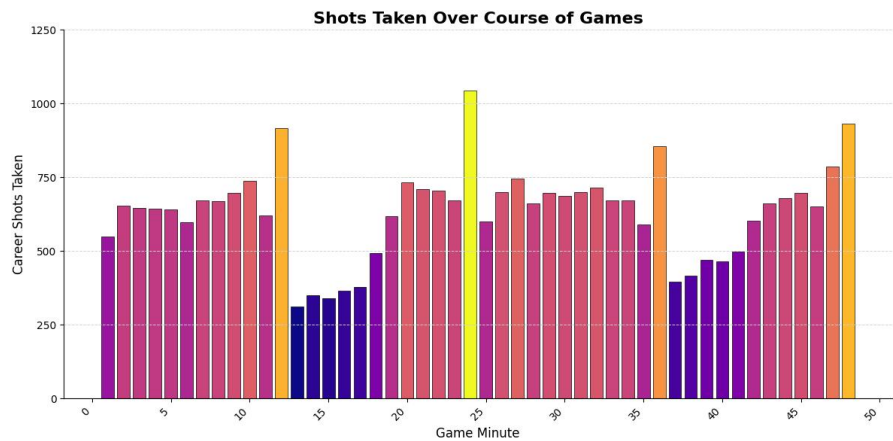


Figure 5 : Shots Taken Over Course of Games

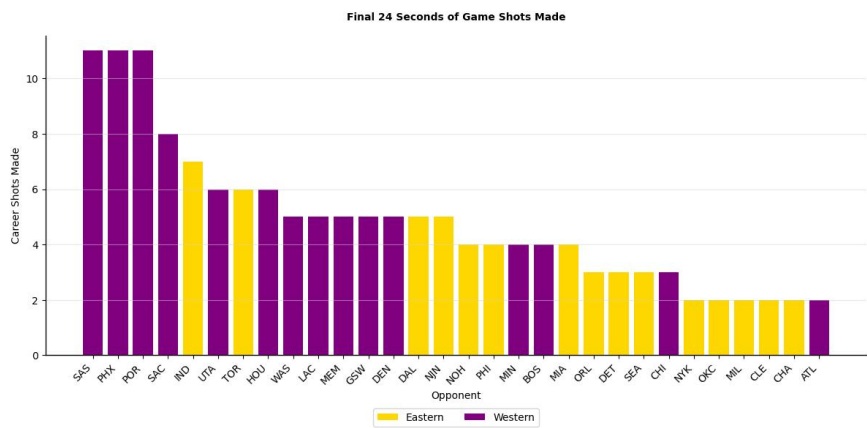


Figure 6 : All Career Shots

Figures 5 and 6 analyze Kobe Bryant's shooting frequency over the course of a game and his career. Figure 5 highlights four distinct spikes corresponding to the final minute of each quarter, illustrating Kobe's tendency to take control during high-pressure moments. The dips during the first 4-6 minutes of the 2nd and 4th quarters reflect his rest periods. Figure 6 complements this by showing all career shots spatially, emphasizing his consistency and dominance across different game situations. Together, these figures reveal Kobe's ability to deliver in clutch moments and maintain his impact throughout a 20-year career.

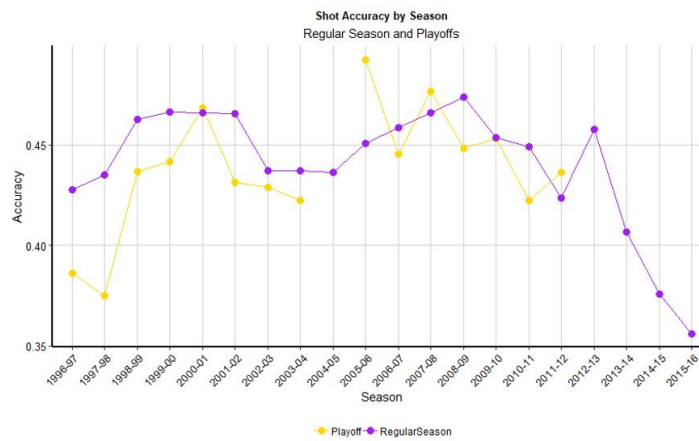


Figure 7 : Shot Accuracy by Season

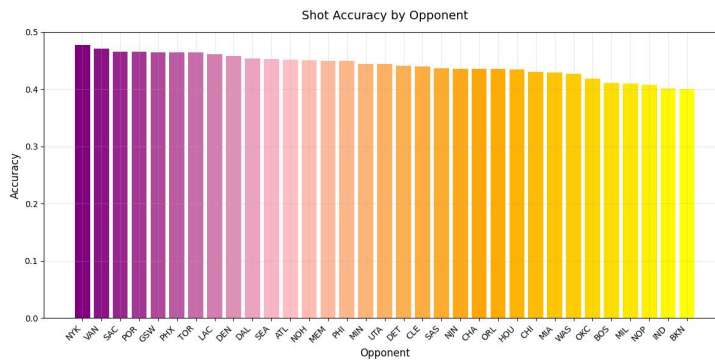


Figure 8 : Shot Accuracy by Opponent

Figures 7 and 8 explore Kobe's accuracy trends. Figure 7 shows his improvement in playoff accuracy, peaking in his later years. Figure 8 highlights accuracy by opponent, with standout performances against Western Conference teams and iconic moments in New York. These figures demonstrate Kobe's ability to adapt and excel across contexts.

Importance: In this project, I initially created numerous visualizations from the dataset but narrowed it down to the most impactful eight figures to present. Each visualization was chosen to highlight a unique perspective on Kobe Bryant's legendary career while ensuring the data conveyed consistent and interconnected insights. By visualizing the data in diverse formats, such as scatter plots, bar charts, and accuracy heatmaps, we capture the physical locations of shots, their frequencies, and efficiency. Scatter plots like the charts (Figures 2, 3 and 4) vividly represent scoring patterns but may lack detailed trends. Meanwhile, accuracy plots like Figures 5 and 6 focus on statistical performance but cannot provide spatial context. Together, these visualizations complement each other, offering a holistic understanding of Kobe's performance across his career.

Data and Method: The dataset used for this analysis is the open-source Kaggle dataset, "Kobe Bryant Shot Selection," which contains 30,699 shots spanning 20 seasons of his career. All visualizations were created in Python using libraries such as Pandas for data preprocessing, Matplotlib and Seaborn for chart creation, and other Python packages for additional support. Different visualizations required tailored preprocessing steps, such as filtering by time and shot type for bar charts or aggregating accuracy by zone for heatmaps. Additional details on the code, dataset, and methodology are available in the GitHub repository linked below.

GitHub Link: <https://github.com/Hehua-Fan/Kobe-Career-Shot-Data-Visualization>

Google Colab Link:

<https://colab.research.google.com/drive/1bs7uCoY1uUqwZ2OLHiC57uuyVHu-2k5r#scrollTo=uQGCEBv0l60E>