Visual Analytics Project Proposal by Carmella Sta Ana Pana
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INTERACTIVE VISUAL ANALYTICS OF NBA PLAYERS' PERFORMANCE

THE DATA AND GENERAL IDEA

The dataset I chose for the VA project is the NBA Players' Stats data from the official NBA Stats website. In particular, it contains different game metrics (such as number of points, assists, rebounds, etc.) of all the players from current and past NBA seasons.
A season's dataset contains approximately 500-600 tuples and about 26 dimensions, already satisfying the AS index required.
The project aims to analyze and visualize NBA players performance using the metrics defined in the dataset. By integrating analytics techniques and interactive visualizations, the system will provide meaningful insights for various kinds of users.

The potential users are NBA analysts, team managers, coaches, and basketball enthusiasts. They can identify high-performing players, explore versatility, visualize and compare their contributions to the games.

ANALYTICS AND VISUALIZATIONS

PCA (Principal Component Analysis) can be applied to perform dimensionality reduction on the dataset and identify different clusters of players to segment them into distinct groups.
A scatterplot can visualize player clusters using color-coded points. Users can be allowed to dynamically choose the number the of clusters or compute correlations between some pair of metrics to highlight correlations and display the updated visualization.
A radar chart, coordinated to the scatterplot, can compare player profiles across a set of metrics, and it can include some dynamic filtering to select and overlay multiple players in order to allow direct comparison among players based on their statistics.
A parallel coordinates view can also help to visualize multiple metrics about the players all at once to compare and determine correlations and visually explore how different metrics relate across the entire dataset.
A line chart can show trends over time for some top players for certain metrics. This can be done by also integrating the available datasets from the past seasons (for example from 2020 up to now). It will help analyze consistency or identify improving or declining players.
A quick and initial mockup of the system is shown in the figure.