**Predicting career path of NBA players**

Much research has been conducted to predict the career path of Major League Baseball (MBL) players. These researches focus on the usage of labeled data, such as salaries and physical properties of a player. Linear regression models were applied on this data in order to predict the career path, i.e success, of a player. This led to models that were reasonably able to predict the trajectory of a MLB player. Baseball has made much progress with the application of advanced statistics to the available data in comparison with basketball. The latter has barely scratched the surface with this analysis and with the growing availability of data an increase in interests has occurred leading to the NBA to published much of their available data.

Recent research has attempted to achieve similar results for the career path of National Basketball Association (NBA) players. These researches focus on the usage of labeled data such as number of seasons played [1], achieving poor result using nearest neighbor classifications. Other research has attempted to use salaries as a label, which led to numerous difficulties. Not only did earlier research show that the salaries [2] are not a good indicator of success [3], the salaries appeared to be less uniform and present than expected. Research conducted by Moxley et al. (2014) [4] defines career success as a result from past performance.

This thesis proposes to apply neural network architectures such as LTSM and SVM and a j48 decision tree to attack the problem of accurately predicting the career path of NBA players. As mentioned, previous research focused on salaries as a label and achieved poor results with predicting the career path of NBA player. Therefore, this research will not only focus on the usage of salaries as an indicator of success and other labels will be considered. These labels are residence, draft year [5][6][7], seasons played[3] and, as was the case with the MLB, physical properties that might influence performance and the career path[5]. Neural networks have been used prior on basketball data to predict outcome of NBA games [8]. However, most research on basketball is conducted using statistical methodologies and less is done with neural network architectures [9]. This research aims to demonstrate the strength of applying neural network architectures to basketball data by predicting and classifying the career path of a given NBA player. The result is measured of the classification is compared with previous work where only statistical methods were used.

As basketball data is collected from 1985 onwards it allow for the train, test and validation set to consist of different timeframes. The availability of the data will determine the different sets. The data contains the aforementioned labels.

Finally an comparison of the chosen architecture to assess the accuracy of the features and architecture, to aid in the process of career path prediction for NBA players.

**References**

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