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## **Enhanced Player Discovery via Machine Learning**

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**Abstract:** Forecasting the number of Olympic medals for each nation is highly relevant for different stakeholders: Ex ante, sports betting companies can determine the odds while sponsors and media companies can allocate their resources to promising teams. Ex post, sports politicians and managers can benchmark the performance of their teams and evaluate the drivers of success. To significantly increase the Olympic medal forecasting accuracy, we apply machine learning, more specifically a two-staged, thus outperforming more traditional naïve forecast for three previous Olympics held in the past years.

In our project best player is predicted by algorithms namely Naïve Bayes (NB) as existing and K Nearest Neighbor (KNN) as proposed system and compared in terms of Accuracy. From the results obtained its proved that proposed KNN works better than existing NB. This project aims to develop a machine learning solution in Python for searching and ranking the best players based on their performance metrics.

The project involves collecting and preprocessing relevant player data, including statistics and attributes. Various machine learning algorithms, such as regression or ranking models, are explored to predict player performance. The trained model is then deployed to make real-time predictions, assisting sports teams or gaming platforms in selecting the most suitable players. The project highlights the potential of machine learning in optimizing player selection processes, offering a scalable and data-driven approach to identifying top performers.

Keywords: Machine learning, Naive bayes(NB), K Nearest Neighbor (KNN), Python, Forecasting accuracy, Player performance metrics

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