**CSE 519 - Final Report - The Olympic Team Challenge**

**Introduction**

The primary objective of this project is to conduct a thorough analysis of the factors influencing a country's participation in the Olympics. The investigation delves into the trends of Olympic participation, drawing data from diverse sources such as the '120 years of Olympic history: athletes and results' dataset on Kaggle, World Bank indicators, and supplementary country information from the Global Country Information Dataset. Our project culminates in an ensemble model that forecasts participation in the future Olympics, given the current statistics of a country.

We are also linking our past reports for reference:

1. **Project Proposal**: <https://tinyurl.com/cse519-project-proposal>
2. **Progress Report**: <https://tinyurl.com/cse519-progress-report>

**Data**

The dataset was meticulously constructed by amalgamating information from multiple sources. The '120 years of Olympic history: athletes and results' dataset covers the period from 1896 to 2016, while the World Bank indicators dataset spans from 1960 to 2021. The World Bank dataset encompasses a spectrum of indicators spanning population, education, infrastructure, and economy.

The resulting dataset was not ideal to train machine learning models on, so we performed the following steps to produce a usable dataset:

1. **Feature Engineering**:
2. **Standardization**:

We have made our dataset publicly available here: <https://www.kaggle.com/datasets/akashsuper2000/olympic-data-with-country-indicators/>

The resulting dataset was more meaningful to allow it to be usable for generating plots and insights.

**Modeling**

Models and explanations here.

**Results**

Charts, tables

**Predictions**

Olympic 2024 predictions

**Conclusion**

We have completed our committed timeline (see from previous reports). We got good results.

We have open-sourced our code and all the related documents in this actively maintained GitHub repository: <https://github.com/akashsuper2000/olympics-participation-prediction>