**CSE 523 Machine Learning**

**Section 1**

**Group: Decision Makers**

**Project Number 6: Athlete profiling based on similar characteristics**

**Weekly Report**

**Week 3**

**Introduction:**

In todays’ time analysing data has occupied a central role in competing sports like basketball, football, cricket and more, which help in evaluating player at various levels, i.e., individual, team and conference level. By evaluating players, coaches can help players improve their performance of players by incorporating appropriate training methods like skill training or strength training based on their performance. Hence, our goal of the project is to cluster similar players and identify the characteristics of that cluster in order to improve their performance by giving appropriate training where the cluster lags.

**Progress Summary:**

We explored the dataset of Sixteen Division -1 female basketball players, which included their RSI Mod, workload data, subjective questionnaire data, sleep data. By performing literature survey, we identified the dominating parameters which determine the performance at individual levels, team level and conference levels. Next, we further discussed about the nature of dataset, which included various null cells. We are yet to discuss what methods to adopt to counter the data correction. Also, we initiated the discussion about our approach to deal with the problem and define our model.

**Next Steps:**

We will explore various existing models for clustering and find the method which we can incorporate in our model to cluster similar athletes.

**Appendix:**

1. A holistic approach to performance prediction in collegiate athletics: player, team, and conference perspectives. Taber, C. B., Sharma, S., Raval, M. S., Senbel, S., Keefe, A., Shah, J., Patterson, E., Nolan, J., Sertac Artan, N., & Kaya, T. (2024)**.** <https://www.nature.com/articles/s41598-024-51658-8>