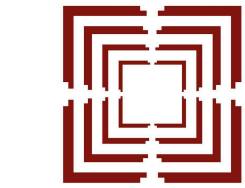

Ahmedabad
University

CSE623: Machine Learning Theory and Practise

Report-2

Group 1

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Work done:

- Dataset normalised
- Read through various research papers to understand the game score analysis.
- Data visualization and correlation for understanding and knowing if there exist any relation between features or not.
- Understood different clustering algorithms like k-means clustering, mean shift clustering, DBSCAN clustering and hierarchical clustering etc. Below are the learning outcomes.

Learning Outcomes:

On comparing different clustering algorithms, we found:

1. **K-Modes Clustering:** Groups athletes based on categorical features like player positions or injury history.
2. **Gaussian Mixture Model (GMM):** Clusters athletes by performance metrics while accounting for overlapping statistical distributions.
3. **XGBoost:** Utilizes gradient boosting decision trees to enhance prediction accuracy in player performance modeling.
4. **DBSCAN:** Detects outlier players by identifying exceptional performances or rare playing patterns.

Goals for Next week:

- Finalising the clustering method
- Working towards the player selection based on the game score, time played and features.
- Segregation of attack and defender based on the attacking and defending game score using regression and put player on that list which could help the recruiters shortlisting the players.