

VISUAL ANALYSIS USING GEPHI

Graph 1 : Partnerships

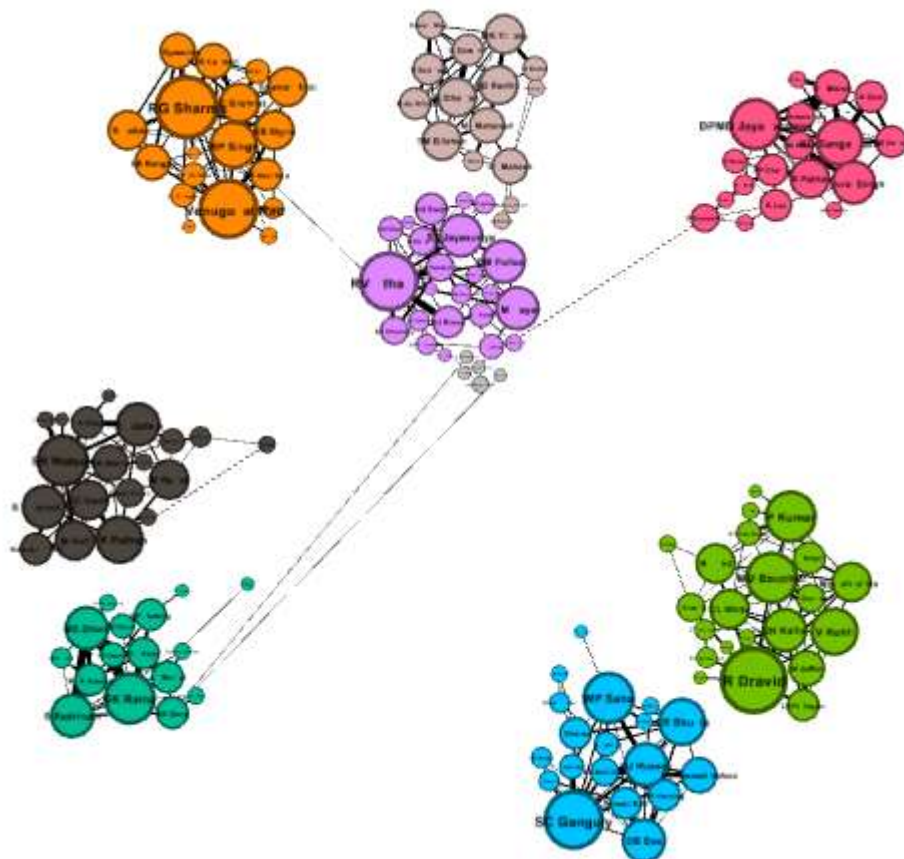
Relationship:

Defines an edge between two players if they have ever been at the crease together. Edge weight is the average partnership score across matches.

Uses:

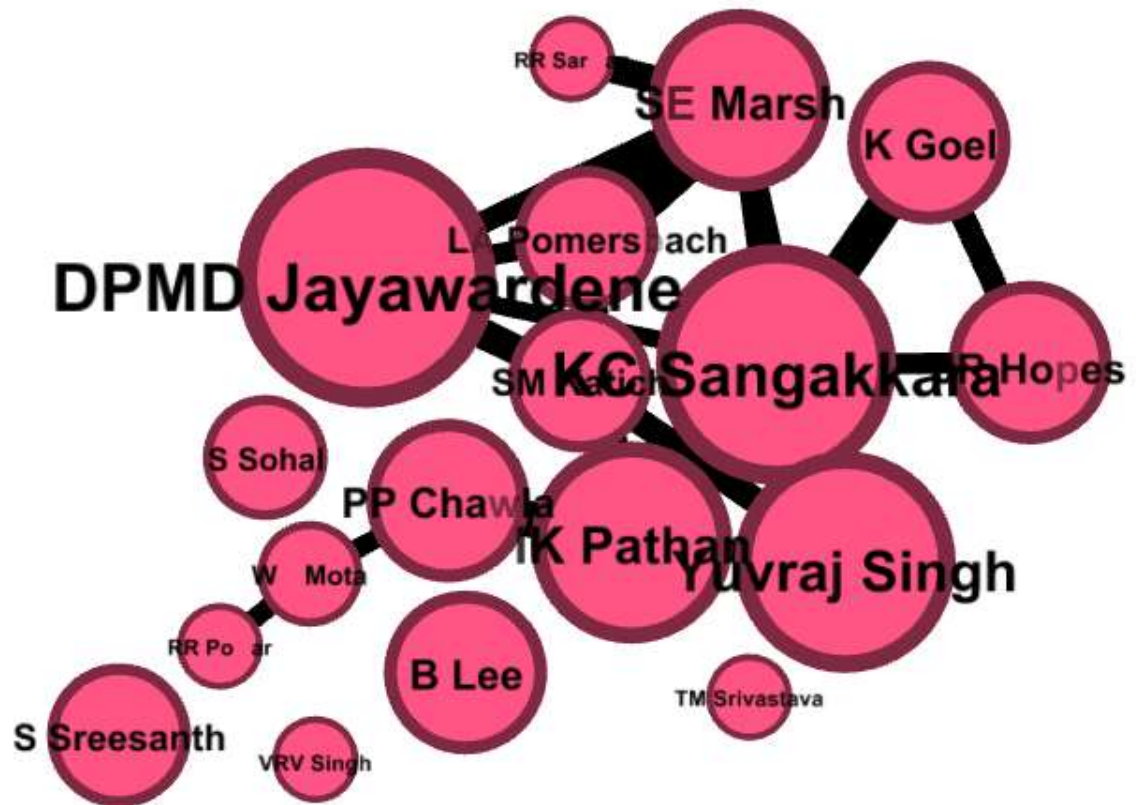
- 1) Helps in selecting the best batsmen for a team. Team selectors can use this graph to and select a group of batsmen who have a large number of edges between them and also good edge weights. The modularity function can be used for this purpose.

eg:-



The different colours show different modularity classes. Selecting a group of batsmen from the same modularity class would make sense.

eg: By filtering edges by edge weight we can find out which sets of players have had the best partnerships together.



- 2) Helps in identifying the most valuable players in terms of supporting partnerships. This can be done by sizing the nodes in proportion to degree or by filtering according to degree. The biggest nodes are the players who have been in most partnerships. A further analysis can be done by taking into consideration the edge weights of edges incident on these nodes.
eg: Rahul Dravid has been in the most partnerships (with 15 other players).

- 1) Best partners: MS Dhoni and Mathew Hayden with average partnership score of 137.
- 2) Batsman who has been in highest no of different partnerships: Rahul Dravid (15).

Graph 2: Dismissals

Relationship:

Directed edge from batsman to bowler implies that the batsman was dismissed by the bowler at least once. Edge weight is the number of dismissals of the same batsman by the bowler.

Uses:

- 1) Can help in finding out the most effective bowler in getting a batsman out.
Eg: Best bowler against V Sehwag is SR Watson. Watson has dismissed Sehwag thrice. Similarly, best bowler against KC Sangakkara is Umar Gul (2 dismissals).
- 2) Gives information on number of wickets taken by bowlers.

Some interesting information:

- 1) Highest number of dismissals of the same batsman by a bowler: 3 times (V Sehwag by SR Watson).
- 2) Bowler with highest number of wickets: Sohail Tanvir (20 wickets).

Graph 3: High scores

Relationship:

Edge between two players implies that both player scored above 30 runs in the same match.
Edge weight indicates the number of matches in which they have done so.

Uses:

- 1) In team selection. Helps in figuring out which players can perform well under similar conditions.

Some interesting information:

- 1) G Gambhir and S Dhawan have scored more than 30 in 4 matches (the highest).

Graph 4: Strike rates

Relationship:

Edge between two players implies that both players have similar overall strike rate. Edge weight indicates the number of matches in which they have done so.

Uses:

- 1) In team selection. For a batting pitch it is better to have good strikers while for a bowling pitch it may be better to have more careful players.

Some interesting information:

- 1) B McCullum, V Sehwag, MEK Hussey, YK Pathan, LRPL Taylor, Shahid Afridi and Kamran Akmal have the best strike rates (between 160 and 180).
- 2) Most players have strike rates between 100 and 120. There are 24 players in this range.

Graph 5: Batsman vs Bowler

Relationship:

Edge from batsman to bowler implies that the batsman has faced the bowler at least once.
Edge weight is the average runs scored by the batsman against the bowler.

Uses:

- 1) Gives information on which bowler is best against a batsman and vice versa.
- 2) Gives information about the number of bowlers faced by a batsman and vice versa.

Some interesting information:

- 1) Best performance of batsman against a bowler: MA Gony averages 57 against SA Asnodkar
- 2) Rahul Dravid has faced the most number of bowlers (47 bowlers).
- 3) IK Pathan has face the most number of batsmen (61 batsmen).