**Related Work:**

1. **Comparing Community Structure to Characteristics in Online Collegiate Social Networks**

This paper examines the graphs of Facebook ‘friendship’ of students from five different universities and analyses their communities. It involves calculation of different characteristics of community structures of a university and compare them to others and studies its relationship with the structure of the graphs. This study used spectral optimization methods, pair counting, and cluster matching to analyze the structure of the networks. The five universities studied were Caltech, Georgetown, Princeton University, University of Oklahoma, University of North Carolina at Chapel Hill. The study concluded that their algorithm to study different social networks was successful to detect and compare communities compared to with those obtained

by grouping individuals according to self-identified characteristics. The universities were found to have different major communities based on the factors like class year, dorms / residence , high school affiliations of students, and their majors.

**2. Finding and evaluating community structure in networks**

This paper includes studying a set of algorithms for discovering community structure in networks—natural divisions of network nodes into densely connected subgroups. It involves iterative removal of edges from the network to split it into communities by counting betweenness of the edges. The algorithm also proposes a measure to determine the strength of the networks and based on that provides the number of communities into which network can be divided. One of the applications of this study is to help facilitate the community detection in a network with unknown communities. The provided algorithms was found to successfully detect communities from a real and computer generated networks.

**3. Comparing Social Networks: Size, Density, and Local Structure**

This paper shows the limitations in usefulness of the triad census for studying similarities among local structural properties of social networks. It involves the study of exponential random graph models and compares the dissimilarities of the graphs, and the study of local structure of the graphs. The study shows that network of a specific relational content in aggregate shows common structural tendencies.

**4. Users of the world, unite! The challenges and opportunities of Social Media**

This article attempts to define social media and gives different classifications of it. The categories involve the characteristics and activities of users online like, collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds.

**5. Why We Twitter: Understanding Microblogging Usage and Communities**

This paper presents observations of the microblogging phenomena by studying the topological and geographical properties of Twitter’s social network. It analyzes the user intentions

involved at a community level and show how users with similar intentions connect with each other. The main analysis is conducted on twitter interactions across different countries. The conclusion is found that the new social network of ‘microblogging’ has a high degree correlation and reciprocity, indicating close mutual acquaintances among users. Additionally it concludes that understanding the intentions of these user groups and learning how and why people use such tools can be helpful in improving them and adding new features that would retain more users.