Abstract

The information revolution has given birth to Social Networks, which allows structured flow of data, information, and knowledge. Social networks are nodes of individuals, groups, organizations, and related systems that are linked by one or more types of interdependencies. The defining feature of social network analysis is its focus on the structure of relationships. Social network analysis is a set of theories, tools, and processes for better understanding the relationships and structure of a network. Identification of Clusters in Social network is an active area research in artificial intelligence and pattern matching. Adding constraints to clustering improves the performance of a variety of algorithms. Cluster analysis is concerned with the
problem of partitioning a given set of entities into homogeneous and well-separated subsets called clusters. Cluster Analysis aims at finding subsets, called clusters, which are homogeneous and/or well separated. Minimum sum of diameters clustering for two clusters can be solved by reduction constraints into the 2-Conjunctive Normal Form statement. Hansen [4] uses Boolean approach to represent constraint in 2-clusters analysis. Identified constraints are represented in the form of 2-SAT statement. Constraint representation of 3-cluster or more than 3-cluster is not possible using Boolean approach. In our earlier paper [11], an approach was proposed “Belonging approach” using that constraints of 2-Cluster are represented in 2-SAT form. In this paper “Belonging approach” is extended for the representation of constraints in K-cluster. This approach can be used to generate constraints for 3-cluster for any value positive integer value of k. Constraints is generated in the form of K-SAT statement. This paper presents a formulation that find out the constraints in k-cluster based on concept of bonding and bridging in social network.

Reference

3. John E. Hopcroft, Jeffrey D. Ullman: Introduction to automaton theory, languages and computation. pg no. 324-325


**Index Terms**

Computer Science  
Communications

**Key words**

Must Link Constraint  
Can Not Link Constraint

Belonging approach

Bonding

Bridging