

Social Aspects of Friend Identification and Profile Ranking in Internet of Things Era

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Abstract— In this paper a model is proposed to emphasize the use and advantages of profile ranking based upon social contacts or friends' group. The basic idea behind the model is grouping the people socially on the basis of sharing common behaviour, usage patterns of social media or other applications. This model can be easily incorporated with existing technology and prove beneficial from ample of aspects as discussed throughout the literature.

Keywords— Social contacts, Internet of Things, K-mean, K-nearest neighbour, Profile Ranking

I. INTRODUCTION

In the present scenario, social contacts [1] are playing a major role in the life of the people. The users create their own groups by managing the contacts on the social networks. The behavioural patterns of individual can also be perceived from the way of using these social media websites.

A larger impact can be analysed from the fact that social relationship is having a great impact on the friendship, purchasing behaviour [11][12], lifestyle and travelling pattern of the individuals. This resulted in increased popularity of social networking sites among individuals in recent years.

In this paper a discussion has been made upon identification of common friends according to similar behaviour. Various metrics have been presented to study and ranking of the profile.

II. RELATED WORK

In this paper (Behavioural biometrics: a survey and classification) [2] has discussed the behavioural Biometrics[8] which is based on skills, style, preferences[17], knowledge used by people and used a generalized algorithm which classify the user profile based on behavioural biometrics[9].

A driver behaviour reorganization method based on a Driver Model Framework [4] has made a technique for detecting drivers intentions is essential to facilitate operating mode transitions between driver and driver assistant systems using Hidden Markov Models (HMMs) which has been used to characterize and detect driving maneuvers and place it in the framework of cognitive model of human behaviour.

The Internet of Things [1]: A survey has discussed about IOT application and their specific area, technologies, security and privacy of data in IOT infrastructure.

In the proposed model k-mean clustering is used in making the cluster of user profile of various social platform on basis of different parameters[14][16][18] like common field

of interest, usage timing of social platforms, common buying behaviour pattern.

After making the cluster of user profile, k-nearest neighbour algorithm is used to find strength between two common friends in cluster of various user profile on the basis of their similar properties and match.

III. PROPOSED MODEL

In this paper we have proposed a model that correlates the idea for social friendship of individual based on the behaviour of the usage of various application. The module is divided into two parts, the first part deals with classification of common friends. These friends share similar features. The second module works to group their friendship on the likelihood of attaining ranking for a particular friend. This generates the strength of friendship as they both share in accordance to the usage features.

The friends [6] can easily access the features shared by their mates [5]. These features can be either product(s) they wish to buy, books they need to purchase, movies they would like to watch, or places they would like to visit. Each friend will have its own ranking of friends [15]. Thus, generating combinations in a personalised [19] way for each individual.

Introduction for the algorithms to be used for efficient performance have been proposed in the upcoming subsections. Furthermore, the proposed architectures consisting of two modules have been depicted in the figure 1. As depicted, it presents an era of impact to the user based on social profile ranking of the individual. In the work, a common profiling mechanism has been formulated based on the discussed features. These helps to group the interested individual into one community. This community has been trained and analysed based on elaborated parameters and further the strength of contact is measured. The algorithms used have been discussed below.

A. K-MEAN –

The k-mean clustering algorithm has been best suite according to this problem domain. Its procedure follows a simple and easy way to classify a given data set which consists of the relevant features. These features could be the likeness towards a particular website, platform, product, learning tool which forms a certain number of clusters (assume k clusters). The cluster defines a relationship in common towards a particular feature or asset of interest [10] [13]. To make a relation with common interest on social networks [3][7], it is easy to identify by common area of interest and social activity rate of users on different social network platform. After applying this algorithm, we form a cluster of common social friends based on their area of interest and usages of social activity rate of users.

B. K-nearest neighbours (for interest)

According to their behaviour, k-nearest neighbours is suitable for classification and regression. To identify the relation between two entities or group of entities according to their common behaviour and other similar properties. Entities in our work depicts the relationship between two or more user profiles. This algorithm can give the good result. To identify the relation between two friends on social network, it takes the properties area of common interest and social activity rate (duration) of different platforms as input and classify the friends which have social connection based on common area of interest.

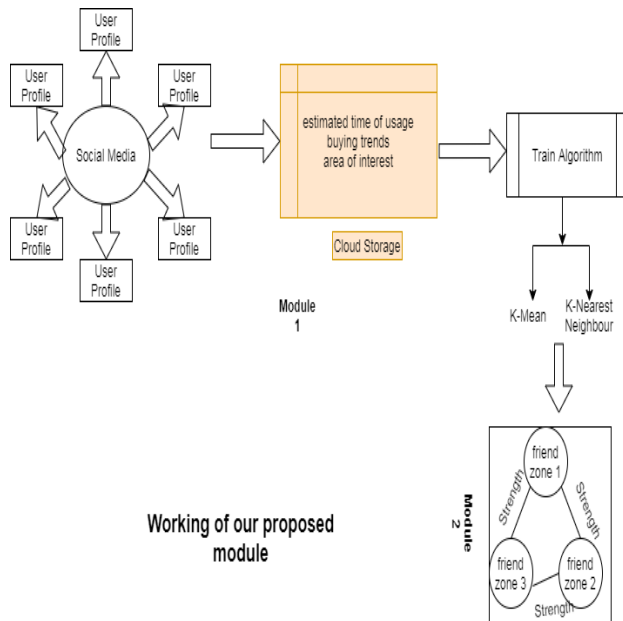


Figure 1: Social Media Impact in an era of IOT

The proposed model consists of two parts or modules as illustrated to formulate a proper working of the design. Module 1 computes the clusters of friends sharing similar features based upon the common characteristics of the users. This provides a medium to group people on the basis of similar area of interest[20][21]. Module 2 works on finding the strength of friends. This strength denotes the ranking which further influences the buying behaviour, visiting trend or other features as desired by the user. This trend can be useful to save the time of the user. Time can be saved as only the crucial reviews can be seen. Profile ranking helps to depict the reviews. These reviews can be most beneficial, as according to strengthen these matters at the most.

IV. CONCLUSION

Participatory and opportunistic sensing[7] have been the two most relevant areas of research in this decade. Smart user devices and applications have been of utmost importance in these types of sensing. Paving a way towards smart IoT era. In the paper we have enabled an architecture to floor a way toward saving time and effort in profiling the important aspects of our need. The

application of two techniques as discussed can be further used to enhance the profile and its ranking, which is perceived by other users. Social internet of things is playing a crucial role in today's era. The use of social applications and its aspects has been found to be of a great use. Behaviour pattern analysis has been made in our work which helps us to gain an insight about the behaviour of the users. For this work the two most popular algorithms have been used. Both the algorithms have their own impact over the data and efficiently

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