A Statistical Model to Determine the Behavior Adoption in Different Timestamps on Online Social Network

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ABSTRACT

In this article, a statistical model has been proposed to determine the behavior adoption among the users in different timestamps on online social networks by using vector space models and term frequency – inverse document frequency techniques. The concepts of herd behavior and collective behavior have been used successfully in the proposed model. The result has been generated after analyzing the collected dataset. The result analysis shows the diffusion of information among the participants from an initial timestamp to later timestamps.

KEYWORDS

Behavior Adoption, Collective Behavior, Data Analysis, Data Mining, Herd Behavior, Social Network Analysis, Vector Space Model

INTRODUCTION

Now days, the technological advancement in computational areas has already put its steps in every fields of science and technology. It can be said; this is the era of cloud computing/machine learning/Social Networks. In this paper, one of the popular social networking sites has been used to analyze user’s sentiment and its effect on other users. It is observed that when the users write comments in a Facebook post published by someone, most of the time the users do not read the complete content.
Generally, they read few lines and develop some idea about the posts. They see some of the previous comments given by other members and their friends, and then they write their own comments. The current paper shows that these actions lead to create the herd behavior on social networks. Herd behavior is a phenomenon which causes people to think, behave or act in similar manner or highly correlated as part of a group but without any plan, where network is observable and only public information are available. Collective behavior explains when a group of individuals are behaving in a similar way and it might be planned and organized, but often it is spontaneous and unplanned. So, the process can be explained with a small example: Suppose there are two restaurants as A and B where restaurant A’s users feedback/review is better than restaurant B. Now at time t1, a set of people are attracted by the restaurant B due to some reasons. But at time t2 when other group of people is going to select between restaurant A and B, few of them (or most of them) will select restaurant B, because of the presence of other members of the group from time t1 in restaurant B. Though restaurant A’s user review is better but the presence of a group of people in restaurant B influences the other customers of different timestamps too. It may continue to some other timestamps for instance t3, t4 and so on. But this behavior initiated from t1 and this concept has been used to analyze the comments posted on Facebook.

In the current paper, the primary target is to determine the minimum requirement for herd behavior on online posts and comments through Social Networks, submitted by the users of that social networking site. To analyze the behavior adoption, different timestamps have been taken apparently, along with user’s comments on a post and the proposed model shows that the users of later timestamps are following or adopting the behavior of initial timestamp. Simply it can be said that the users of different timestamps are following or being influenced by the comments of the users of initial timestamp while they are going to write their own. And then the proposed model tries to predict the upcoming behavior of the users, from previous analysis. The Proposed model can be used on different social networks like Facebook, Twitter, LinkedIn etc. to receive the feedback from the users.

The paper is organized as follows: Next section explains the common terms and concepts along with the different metrics of statistics required for thorough understanding of the proposed model. The related work section discusses about the previous works done in this or related areas. Following sections discuss about the proposed model to determine the behavior adoption in different timestamps using social network, data model containing survey on Facebook to collect data along with similarity calculation on the collected data followed by result analysis & discussion. Last section contains the conclusion with future scope.

**COMMON TERMS AND CONCEPTS**

Brief idea of few terms and concepts which are used to build up the model.
Grading Sewing Operator Skill Using Principal Component Analysis and Ordinal Logistic Regression

Model-Driven Approaches to Service Composition
[www.igi-global.com/article/model-driven-approaches-to-service-composition/98597?camid=4v1a](www.igi-global.com/article/model-driven-approaches-to-service-composition/98597?camid=4v1a)

The World Code: Mathematical Ontology as the Real Road to Reality
[www.igi-global.com/chapter/world-code-mathematical-ontology-real/28310?camid=4v1a](www.igi-global.com/chapter/world-code-mathematical-ontology-real/28310?camid=4v1a)