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PTIB: Profiling Top Influential Blogger in Online Social Networks

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Online Social Networks (OSNs) facilitate to create and spread information easily and rapidly, influencing others to participate and propagandize. This work proposes a novel method of profiling Top Influential Blogger (TIB) based on the activities performed on blog documents of a blogger who influences various other bloggers in Social Blog Network (SBN). After constructing a social blogging site, a SBN is analyzed with appropriate parameters to get the Influential Blog Power (IBP) of each blogger in the network. Based on the time of exposure of the documents and activities performed on them, more than one blogger is likely to have the same maximum IBP value leading to conflict in identifying TIB amongst them. We introduce two additional parameters namely; Document Count (DC) and Average Time of Exposure (ATE) to resolve the conflict, resulting in accurately profiling TIB by computing Top Blog Power (TBP). The proposed Profiling Top Influential Blogger algorithm is adequate and accurate in determining the Top Influential Blogger at any instant of time considered.

Keywords: Blog Document, Data Mining, Influential Blogger, Online Social Networks, Profiling, Top Influential Blogger.

1. INTRODUCTION

The web content, creation and usage has dramatically changed in the recent past with the evolution of Online Social Networks (OSNs). The rise of social media platforms such as Twitter, Google+, Facebook, Blog network *etc.*, is generating a huge amount of data every hour. Focus on user-generated content, activities upon them and social networking, has brought the scope for the study and influence over OSNs and data analysis through dynamic mining [1][2]. A social blog network is viewed as an OSN composed of nodes that represent blogs and links representing relations between blogs, *e.g.*, myspace.com, blogger.com *etc.*, allowing easy spread of information.

Blog growth is massive. Different types of information, opinions from different perspective is found on blogs by different bloggers on the same topic. Traditionally, people use to follow the words from different persons for taking any decision or to gather any information regarding an issue, which has been totally changed by blog networks. Here bloggers discuss their topic of interest, opinions or confusions openly, which are solved or answered by other bloggers [3]. People with similar interest move closer by sharing their thoughts in their respective posts on blogs. This leads to people creating interesting contents and imposing on others by posting it publicly. Others who find it interesting, perform some actions on that blog, in-turn increasing the influence power of that blogger [4].

Usually, there will be topic headings represented before posting any document to public, but there can be a chance where heading will not have any connection to the content inside the post. Hence, few bloggers exploit the advantage of possessing influence on others in the network by creating attractive content. These

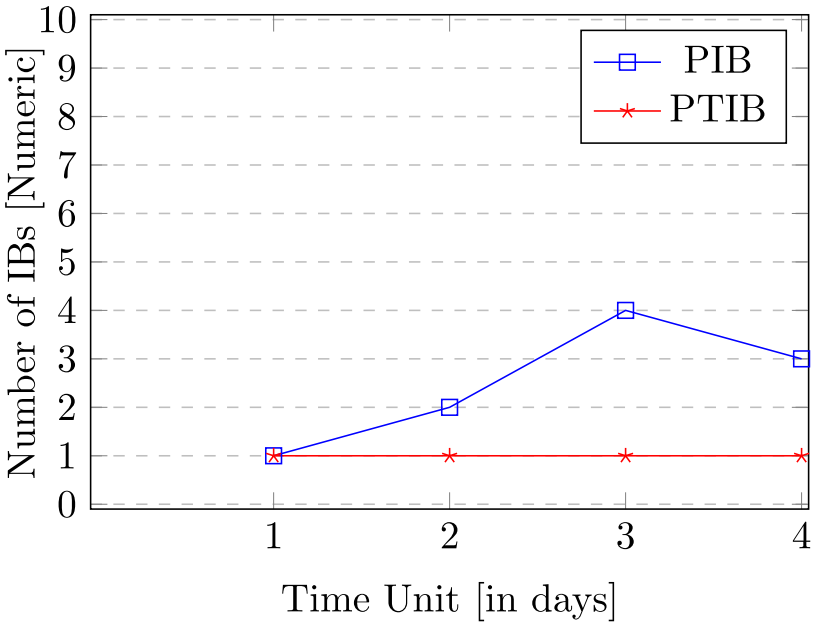

Figure 5. Number of Influential Bloggers over Time.

7. CONCLUSIONS

The paper presents the PTIB Algorithm for profiling the Top Influential Blogger (TIB). Earlier studies determined the influential users based on the number of activities performed on their blog documents and the time of exposure of each document. We have proposed and evaluated a novel method for profiling Top Influential Blogger, mining the bloggers activities data and discovering the knowledge out of it in a blog network. Our simulation results show that at any given instant of time, there exists only one TIB in the network determined with appropriate activity parameters: *Trackback, Scrap* and *Bookmark* and conflict resolving parameters: *Document Count(DC)* and *Average Time of Exposure(ATE)* for identifying the information diffusion and determining the Top Influential Blogger in SBN when compared with existing State-of-the-Art works.

The PTIB algorithm when applied on social blog network of known criminals, helps in identifying the information diffusion of criminal activities and the Top Influential Member of that group. This approach is suitable for targeted advertising and marketing to group of users through the Top Influential User. The avenues for future work are profiling the blogger based on the content of documents posted, extracting the pattern of information diffusion through content mining and to classify active/passive members with the properties of Bridge Blogger in multi-group SBNs.

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