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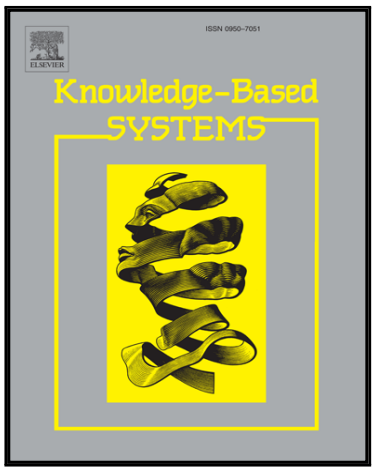

Ant Colony Heuristic for User-Contributed Comments Summarization

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Ant Colony Heuristic for User-Contributed Comments Summarization

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***Abstract*—User-Contributed Comments (UCC) are one of the signs of the social media. Due to the high popularity of social media, it becomes already exceedingly difficult to find the most relevant, interactive information for the users. The motivation behind this work is the fact that users may interest to get an efficacious brief understanding of comments without reading the entire comments. This paper opens up an unconventional field of comment's summarization predicated on Ant Colony Optimization mixed with Jensen-Shannon Divergence (ACO-JSD). ACO-JSD is a proposed novel technique concerning the extraction the most interactive comments from the huge amount of concise comment's perspectives. This problem is unfastened utilizing ACO to generate the optimal solution. Moreover, the JSD model is employed to ensure a summary could capture the essence of the original comments. First, an acyclic semi-graph has been constructed under two constraints: 1) the longest comments will be isolated from the graph, 2) The more similarity between two comments, the greater the chance that mutual connectivity is eliminated. Next, a feasible solution is constructed to select the high-quality summarization. Finally, the proposed algorithm has been evaluated over a collection of Facebook posts with their associated comments and an excellent performance in comparison with traditional document summarization algorithms was obtained. Accordingly, the computational results show the efficiency of the proposed algorithm, as well as its ability to find a good summary that is guaranteed to be near-optimal.**

***Keywords*—** comments summarization, social media, swarm intelligence, ant colony optimization, text mining.

I. INTRODUCTION

In recent years, SM is widespread and has the largest platforms in our daily life. With the tremendous increasing amount of online UCC on social media, users unnecessarily read and go over the whole comments. Moreover, corporations and celebrities are more interested to know how their fans and customers interact with certain topics. Automatic comment's summarization system is a process of filtering important comments from a set of comments to produce a summary for particular users and applications. UCC may aggregate many different opinions of communities about products, political discussions, economic discussions, and other entities of interest. Besides, it can be used by analysts to improve their understanding of current issues such as which topics are important and what

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