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A novel framework to improve the performance of crowdfunding platforms

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Abstract

This work presents a framework for evaluating and promoting campaigns that are launched over a crowdfunding platform. Campaigns are evaluated on the basis of campaign features and pledge performance. To promote a campaign, a recommender model is designed that filters campaigns to be promoted using association rule mining and based on backer's interests. Framework also assesses creators' using their past records and their profile text. This system deals with the issues faced by three stakeholders of crowdfunding and strives to satisfy their requirements and maximizes the utility of tool.

Keywords: crowdfunding platform; prediction; recommendation;

I. Introduction

The crowdfunding industry has emerged as an alternative way to collect funds and has attracted many start-ups, entrepreneurs, artists, creative people, ventures etc. Crowdfunding is generally implemented via crowdfunding platforms. Crowdfunding platforms are the internet-based platforms that raise funds from the funders for various campaigns by creators. The objective of the platform is to maximize the number and size of successful projects. This requires attracting a large community of funders and creators as well as reducing frauds, and facilitating efficient matching between ideas and capital [1]. Platform mainly provides facilities to make best possible communication among different type of users, presentation of campaign and other services. But they lack in prime functionalities such as evaluating campaigns at different stages of funding, matching potential backers with campaigns of interest, assessing creator credibility and trustworthiness.

The proposed work presents a framework to extend the functionalities of the existing platforms. This proposed system provides a mechanism to evaluate and predict a campaign's success at various stages of funding and evolves ways to recommend prospective campaigns to suitable backers. Not only this, it also provides more insight about creators' personalities and activities. The framework also suggests ways to promote campaigns at various stages of the funding cycle to improve the overall success rate of the platforms.

The reminder of this paper is as follows. Literature review is presented in Section 2. Section 3 describes the dataset. Section 4 explains proposed framework. Section 5 exhibits interfaces and implementation.

II. Literature Review

Crowdfunding has been explored by various academicians and researchers of various domains from different perspectives. Economists have studied the impact of crowdfunding on the economy, industry and market. Scholars from management domain have studied it from the angle of opportunities for entrepreneurs and financial support for small and new ventures [2]. Researchers have also paid attention to psychological aspects of users. They focused on motivation behind launching campaigns and investment decisions [3], effect of timing and coordination of investors [4], challenges faced by creators, behavior of contributors, role of communities etc.

Computer science scholars have paid attention to various parameters and their impact on the success of the crowdfunding projects [5], funding patterns, promotion through social media, importance of social network and its size and recommendations of investors for campaigns and so on. Some scholars have also paid attention to crowdfunding intermediators, their working and role. However, we lack in understanding the functionalities of platforms, implementation of policies, improving platform performance, importance of managing campaigns and promotion through platforms etc.

In literature, some scholars have discussed the need of support tools, system and its design implications. In this work, we proposed a model that is implemented and tested in a small setup, and can work as a plug-in tool on the platform in the similar kind of environment.

III. Dataset and Preprocessing

The framework is proposed in Section 4. The testing of the framework was conducted on a sample

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