

Machine learning platform for Crowdfunding Game Campaigns Success

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Abstract

Crowdfunding is an innovative and relatively new financial method that connects entrepreneurs and investors through the Internet. It allows entrepreneurs to raise often small amounts of funds from a large number of investors to finance start-ups. Kickstarter is the largest and most widely known crowdfunding platform for entrepreneurs, investors and researchers in the world. The Kickstarter platform contains 14 categories, one of them is the game category. The game category ranks number one for funds raised and fundraising success, making it a targeting category worthy of a specific study. In this study we used different machine learning algorithms including: decision tree, random forest, one rule, support vector machine, artificial neural network, naïve Bayes, k-nearest neighbors and ensemble learning to establish a machine learning platform for predicting the Kickstarter crowdfunding game campaign's success. In order to establish the predictive platform, the full Kickstarter game data set was retrieved from the web, including 9,962 projects (6,024 successful projects and 3,938 failed projects) between 2009 and 2018. Each project was characterized by one dependent variable, the project outcome (successful or failed project), and 36 independent variables. The 36 independent variables were extracted from two sources. The first source consisted of ten control variables provided or calculated from the Kickstarter database. The second source was 26 text mining variables extracted from the start-up project names. Following characterization, the projects were divided into training and test sets. The models were derived for the project outcome with various techniques. Typically, good predictive models were obtained with the corrected classification rate > 0.75 for the training set and for the test set projects. Analysis of

the resulting models shed light on the relative importance of the different features. In summary, the machine learning platform developed in this study will help entrepreneurs to achieve better outcomes in fund raising and set the ground for forecasting game campaigns success on the Kickstarter platform.