Abstract

YouTube, a widely accessed video-sharing platform available through both mobile applications and web interfaces, serves as a medium for content creators, commonly referred to as YouTubers to engage with their audience. The success of a YouTuber is intricately tied to their audience engagement, encompassing metrics such as total views, comments, and likes garnered by their videos. This study involves the analysis of 7,600 English-language videos uploaded on YouTube between August and September 2020. To assess the predictive success value of a video, the study employs the Facebook Prophet method. Focusing on the upload time as a primary parameter, this method forecasts the growth in the number of YouTube viewers using datasets obtained from the YouTube API. Leveraging Time Series modeling, Facebook Prophet processes data by considering audience interactions throughout a video broadcast. The results derived from the Facebook Prophet model indicate a predictive trend of increasing viewership on YouTube in the coming months. The evaluation of model linearity, measured using the R^2 score to gauge data reliability, reveals a score of 0.39 or 39% which indicates a positive linearity score. And using Pearson correlation it gives 75 accuracy score. This signifies the model's capability to reasonably predict the growth in the number of viewers, contributing valuable insights into the dynamics of YouTube audience engagement over time.

Keywords: Time Series; Youtube; Facebook Prophet; Prediction; R^2 Score; Pearson