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Predicting Android App Success Before Google Play Store Launch Using Machine Learning

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ABSTRACT

The Google Play Store serves as a pivotal platform for Android app developers, drawing millions of users globally. With an overwhelming influx of new apps introduced daily, developers are faced with the critical challenge of sustaining market share amidst fierce competition. Predicting an app's success before its official launch can provide a strategic advantage, potentially transforming how developers approach app releases. In this study, we aim to forecast the success of new Android apps by predicting key indicators such as user ratings and installation numbers prior to their debut on the Google Play Store. Leveraging machine learning techniques, we analyze historical app data and various app features to build predictive models that offer valuable insights into app performance, empowering developers to make data-driven decisions before launch.

Keywords: Mobile Application, Forecasting, Android, App Success, Google Play Store, Launch, Predictive Analytics

INTRODUCTION

Google Play Store is a prime destination for Android app developers, attracting a vast user base. With a large number of new apps being introduced daily, developers face the challenge of maintaining their market share amidst intense competition. The ability to predict an app's performance before its release can provide a significant competitive advantage. Traditionally, an app's success is measured by user ratings and installation numbers. This study aims to forecast the popularity of new apps by predicting user ratings and installation numbers prior to their launch on the Google Play Store. By leveraging advanced machine learning techniques and focusing on internal features, we develop a comprehensive prediction model that offers valuable insights for developers, helping them to optimize their apps for better market performance.

Mobile applications have become integral to daily life due to the widespread use of smartphones. This surge in smartphone usage has led to a significant increase in mobile apps, making the market both extensive and highly competitive. Nearly every digital need has resulted in the creation of multiple apps, offering users a wide range of choices for downloading and usage. In such a competitive environment, numerous factors determine an app's popularity and success. Consequently, developers must carefully consider various aspects during the development and deployment phases. Despite the app store hosting millions of apps, many receive few downloads or go unused. Therefore, understanding how apps become essential to people's lives is crucial. The rapid expansion of the mobile app market has spurred advanced innovation, and as the market continues to grow, so does the number of developers. This growth contributes significantly to the global mobile application sector's revenue. Mobile apps have become the primary utility for smartphones, offering diverse features and services such as social networking, entertainment, shopping, information access, and navigation (Venkata et al., 2014). An app store, such as Google Play, serves as a platform where users can download mobile applications for various services and software (Abdul et al., 2018). Users can browse and download apps from these stores, while developers can monitor their apps