|| Volume 6 || Issue 5 || May 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

MACHINE LEARNING BASED MOBILE APP RECOMMENDATION SYSTEM USING USER'S INTEREST VIA SOCIAL MEDIA: A REVIEW

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Abstract: - Human life has drastically changed due to the increase in the popularity and growth of the mobile devices and mobile apps. If the number of smartphone apps continues to rise, discovering apps for people will only become more difficult. We suggest an app-based recommender that integrates the textual data of social media i.e. Sent posts as well as user interest. We apply topic modelling on social media data to derive topics, and the features of the apps. In addition, user interests are then taken into consideration when constructing the profile. All of the app's subject distributions, as well as the app preferences, are analysed to create customised lists of suggested content for each user. In order to find out whether the environment is different from the design, we use real-world data sets. This experiment has found that social media data such as user generated posts is successful for characterising users' interests, and the proposed application relies on that knowledge.

Keywords— *App recommendation, social media, transfer learning, collaborative filtering.*

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I INTRODUCTION

It has brought significant benefit to the human race as a result of the increasing proliferation and innovation of smartphones and mobile apps. Many applications have been created to help different users with everyday functions, such as work, entertainment, and exercise. There are countless applications available on the iTunes store and Google Play store. People are having a hard time finding suitable apps because of the large number of mobile applications; very few have a real impact on them. Solving the problem of helping end users achieve their expectations therefore becomes crucial.

Recommender systems have become a mainstay of the Internet, helping consumers wade through an ocean of data to choose what they would like to buy. There are a number of common recommendation and app strategies that can be used in app stores, such as collaborative filtering (CF) and content-based filtering, to improve relevance for users. This model assumes that customers who've provided similar ratings on different products are likely to choose similar items. There is a notion that people's desires are encapsulated in the things they browse, and those items that are more of the preferred items are subsequently displayed.

We gain insight into app functionalities from the user's viewpoint by capitalising on users and design a user app recommender framework from that point of view. The topics in the application analysis texts are an example of application functionality. To reflect each app as the probabilities of topic distributions, we collect user feedback from app stores. Based on what the user uses, their profile is constructed from such applications. These topics that the user likes or dislikes can be used to help find more useful features for the user. Recommendation ratings are used to generate both the topics for users, and app choices that are highly important to them.

II RELATED WORK

in this paper[1], the researcher shows that it is possible to make up for the paucity of usage data with learning about the user's app and his/her own interests by using public tweets. To connect people's immediate interests with app use, we create a new generative model called IMCF to predict each user's interest in an app. This paper[2] proposes a deep learning connection end-to-to-end architecture, called DPLink, to help with heterogeneous mobility data obtained from different services The first population-wide study of smartphone application is described in this paper[3]. In analysing a dataset from the city of Shanghai, we compiled over 6 million unique devices that produced more than 10,000 unique applications over the course of a week that were tagged with GPS coordinates. The framework uses transfer learning to predict which apps will be popular, and also uses POI data to predict the entire application distribution based on location.It has been suggested that the use of cross-linked social networking sites and e-commerce accounts may aid in mapping people's social features into another product feature for recommendation. and we make the case for recurrent neural networks for deducing both consumer and product representations from online data that is collected.A graph embedding scheme, called GE, is proposed in this

paper[4]. Conceptually, which integrates the sequential, regional, temporal, and semiotic impacts, but defines them all in a single lower-dimensional coordinate system. In order to capture real-time interests, authors create a novel time-decay approach that uses POIs that are embedded in the latent space to learn and return the user's current desires in real time. A new approach based on a probabilistic factorization model for better analysing social relationships is proposed in this paper[5].in this, the new study, the author sets out to prove that people who use smartphones do not all belong to the same demographic. We studied the app use patterns of 106,762 Android users and uncovered 2 months of data and discovered 38 different user personas based on their app features. This paper[6] differentiates users according to the quantity of applications they have used, which allows users to be distinguished by their software signature. to better understand the app use in use by 46726 Menthal participants Through the use of machine learning, an author proposes[8] a method for predicting human mobility through various data, which is created from online sources, on his website's users' habits. The principle of our approach revolves around is selecting a collection of behavioural features (e.g. location, travel habits, and mobility attributes) and making them part of a classification scheme.The key concept of this[9] approach is to pick a variety of mobility attributes (e.g. location, travel pattern and mobility indicators) which impact and integrate them into a classification model for app use. This approach is evaluated using our self-developed high-speed traffic monitoring system for real-world network traffic (TMS). this method of prediction reaches 90,3\% precision in our experiment, which verifies the clear association between human mobility and application behaviour.One of the most[10] important issues of such processes is cold starting, i.e. when no previous experience is present and a new item is inserted in the system, so there cannot be any successful suggestions. In reality, the item cold starts is a very popular issue: hundreds of new pieces are released regularly on modern web platforms. In order to solve this issue, we propose to learn Local Collective Embeddings: a factorization matrix that takes advantage of property and previous user expectations when applying the diverse structure of group embedding. We have an educational algorithm built on several, easy-to-implement update laws.

III OPEN ISSUES

A lot of work has been done in this field thanks to its extensive use and applications. This section mentions some of the approaches that have been implemented to achieve the same purpose. These works are mainly differentiated from the techniques for mobile app recommendation systems.

- Considering various personal interest and preference, different individuals tend to use different sets of apps.
- For both app developers and service providers, it becomes instrumentally important to know their users' app preference, in order to provide higher-quality and personalized services.

IV CONCLUSION

We incorporate the knowledge that users have about their social media profiles in order to build a personalised recommender framework. In the case of extracting topics from textual data, the topic modelling technique is used. Furthermore, user-profile features are drawn from apps the user has in order to better understand their preferred apps. Personalized app ratings take both the interests and app functionality into account Results collected in the 'real world' are used to conduct tests, which suggest that customised app reviews have meaning.

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