

A Machine Learning based Recommendation Engine helps IMVU stay ahead of the game



partner
network

Customer Challenge

The IMVU Virtual Shop is the largest of its kind, with approximately 7,000 new items added each day. The marketplace allows users to personalize, customize, stylize, and animate 3D avatars and environments to the hearts' content. This is where the company makes money. But the platform has to ensure members are chatting, interacting, creating personas and adding dimensions with jewelry, clothing, cars, new hairstyles, decorating the rooms—mimicking the real world while creating a fantasy. The business imperative for the platform is to extend the duration of user engagement as opportunities are directly proportionate to the time members engage with the platform. Two conditions drive this: larger the community more the engagement; and ability to provide compelling features to attract sticky users. While IMVU has succeeded in the first aim of increasing registrations, it has struggled to convert them into active users. Therefore, one of the immediate goals of IMVU was to enable users to create personalized chatrooms by providing appropriate recommendations. IMVU's current chatroom recommendations on popularity which does not reflect individual likings. IMVU turned to Cloudwick to design intelligent algorithms to get deep insights into user behaviour and create personalized recommendation engine.

Cloudwick Solution

Cloudwick designed Machine Learning algorithms on Amazon EMR clusters using Spark to analyze logs from S3 which captured details of different aspects of user behaviour—which screens user clicked, which chatroom user went, how much time user spent in different chatrooms, etc. Algorithms based on Collaborative Filtering help make automatic predictions about the interest of user by collecting preferences from many users. Cloudwick prepared an initial matrix by putting raw data in data pre-processing modules. Rooms visited by user, and user id, is used to create a matrix with the number of times user visited own room viz-a-viz other rooms. The goal was to assess users' room preference based on the strength of observation which includes frequency of visits and the duration of time spent in different rooms. During data preparation stage, the Cloudwick team iterated several times to normalize as data sets were very large: 24 million active users and over 500,000 chat rooms. Once data was ready, Cloudwick applied machine learning algorithms and again iterated to find the best model to deploy and extract the explicit preference of users. While Spark collaborative modelling enables to predict missing entries by learning the latent factors taking into consideration business goals and quality of data output that would best meet goal requirements. By closely studying usage patterns and iterating the algorithm, Cloudwick created the application aligned to the business requirement. The deployment used r4.8x large EMR clusters of 8 nodes, and Apache Zeppelin to write the Spark code.

About IMVU



IMVU is an online social entertainment destination where members use 3D avatars to meet new people, chat, create and play games with friends. IMVU has over 50 million registered users, 10 million unique visitors per month and three million monthly active users. IMVU has the world's largest virtual goods catalog of over 20 million items, mostly created by members.



Next steps

IMVU has used the model to get insights into user behaviour and preference. Cloudwick will design another model in the second phase based on Content Filtering which takes into account the description of the item and profile of user preference. The hybrid model will enable the team to build a complete recommendation engine

About Cloudwick

Cloudwick is the leading provider of enterprise business and technology modernization services and solutions to the Global 1000 and helps enterprises gain competitive advantage from open source, data lake, big data, cloud and advanced analytics. Cloudwick is an advanced AWS partner with Big data and machine learning competency.

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