

CASE STUDY: CHALLENGES & SOLUTIONS

Cloudwick



3/21/2018, Version 1.0

THE CLIENT

USERS & USE CASES

IMVU, Inc. (www.imvu.com) 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 more than 20 million items, most of which are created by members.



ABOUT

IMVU is free and can be accessed by going to IMVU.com, registering and selecting a personal avatar. Avatars can be customized by purchasing items from its virtual goods catalog. The company provides promotional credits (virtual currency) to get started after which users can purchase additional digital products to make the experience personal.

HISTORY

Founded in 2004 and located in Redwood City, CA IMVU is backed by venture investors Menlo Ventures, Allegis Capital, Bridgescale Partners and Best Buy Capital.

IMVU is unique in that it enables people to socialize in their alter ego—the virtual platform protects users and allows to drop inhibitions, encouraging them to fantasize and create imaginary personalities. Users have created thousands of chatrooms based on different interests where discussions are rich and real—hooking users, enticing them to come back to join the conversations again and again.

“Cloudwick guided IMVU through the various nuances of developing a product recommender system that was delivered for the millions of members of the diverse IMVU online community. They have proven to be a very reliable partner, with deep knowledge in the areas of cloud-based big data solutions, and data science smart solutions, especially machine learning. The knowledge transfer has saved IMVU months of work - we’ve been really pleased with the entire engagement.”

— Kevin Henshaw, Chief Operating Officer, IMVU

THE CHALLENGES

CURRENT PROBLEMS

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 heart's content.

This is where the company makes money. But the platform has to ensure members are spending time chatting, interacting, creating personas and adding dimensions with jewellery, clothing, cars, new hairstyles, decorating the rooms, houses—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. This

is driven by two conditions: larger the community, more the scope of engagement; provide compelling features, environments to attract sticky users.

While IMVU has succeeded in the first objective 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 chat rooms by providing appropriate recommendations. Currently chat room recommendations are based on popularity which does not necessarily reflect individual likings.

IMVU turned to Cloudwick to design intelligent algorithms to get deep insights into user behaviour and create personalized recommendation engine.



THE CLOUDWICK SOLUTION

THE TECHNOLOGY

Cloudwick designed Machine Learning schemas on Amazon EMR clusters using Spark to analyse logs from S3 which captured details of different aspects of user behaviour,

including which screens user clicked, which chatroom user went to, how much time user spent in different chat rooms, etc.

Schemas based on Collaborative Filtering help make automatic predictions about the interest of the user by collecting preferences or taste information from many users. Cloudwick prepared an initial matrix to extract the explicit preference by mapping user id and rooms user visited with the number of times user visited own room viz-a-viz other rooms.

Although the initial matrix was sparse, Spark collaborative modelling enables to predict missing entries by learning the latent factors. The goal was to assess room preference of users based on the strength of observation which includes frequency of visits and the duration of time spent to different rooms.

Cloudwick used r4.8x large EMR clusters of 8 nodes, and Apache Zeppelin to write the Spark code.

THE NEXT STEPS

FUTURE

IMVU has started using the model to get insights into user behaviour and preference. After studying this phase, Cloudwick will design another model 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.