Problem Statement:

Recommendation systems are used from ecommerce to streaming to search engines, recommendation systems are designed to help people have a more personalized experience.

In Ezmall we want to create a Recommendation Engine which will emphasise on Ranking Prediction:

Given a pool of items i.e videos/products, how to rank them for each user on platform to make his experience personalized

This problem is aiming to identify a ranked list of items for the user after he engaged with the app/website. The preference score here can be either explicit feedback (ratings, reviews)or implicit feedbacks(click, views, purchases).

Lets consider example of tiktok and assume there are some products associated with each video

Now every video has its own statistics e.g click ,views, ,share, comments ,likes

And each associated product with video has its own statistics as well e.g. clicks, views, purchases, add to cart, wishlist, search

Now the recommendation Engine should have following features

1. Recommendation algorithm should consider a users interaction on App/web from both video and Product's stats Perspective. For example there might be a scenario that a given video might not be a top ranked for a given user but the product associated with it is quite relevant for same user and vice versa
2. Interrupt repetitiveness (maintain freshness)
3. Diversify recommendation for cross selling opportunities

Please suggest

(a) all possible data points that one should take into consideration to build this system

(b) what algorithms one should use for filtering the data (content based/ collaborative) and why?

(c) how this engine can help in understanding the customer behaviour/ interaction with platform?

(d) How to evaluate the efficiency of recommendation Engine