Recommendation

Content based recommendation

🡪Store item preferences per user.

* Eg, first you go to youtube and search 2-3 videos of linux, then next time he comes youtube shows linux content.

Collaborative filtering (CF)

* Here in content-based recommendation one issue is cold start (First time), first time youtube don’t know what to show.
* Here, they find same filter you have from different persons (Eg, Same age, country) and give you recommendation.
* User-based
* Item-based

Context-Aware (CAR)

* Here we also consider time-zone, location, mood (SomeHow if we can get)
* Mon-fri different video, sun different
* If you are in your home town you prefer McD type, and when you outside you prefer Gujarati restaurant type.

Hybrid

* Here we combine all three - content based, collaborative filtering and content – aware.
* Big companies use this- all three.

Recommendation system

1. Memory based

🡺 Neural network approach.

🡺RBM (Restricted Boltzman machine)

🡺See below.

1. Model based

🡺Clustering (k-mean) 🡪K-mean

🡺matrix factorization

🡪Singular value decomposition (SVD)

🡪 Probabilistic matrix factorization (PMF)

🡺This is tradditional – older approach.

**RBM**

**🡺**RBM is a NN work on unsupervised learning.

🡺RBM is one kind of model.

🡺Architecture of RBM is like an AutoEncoder.

🡺It is one type of autoencoder.

🡺Autoencoder have one hidden layer.

🡺RBM uses shallow NN.

🡺Here input layer is known as visible layer.

🡺Neurons are known as units.

🡺Only one hidden layer (here, neurons are hyper parameter).

🡺First from visible layer hidden layer neuron train and this neuron fill the value (NaN value) in visible layer.

🡪They give ratings to the movie for user.

🡪So wherever you get more ratings, recommend user this movie.