A beginner's guide to understanding recommendation system

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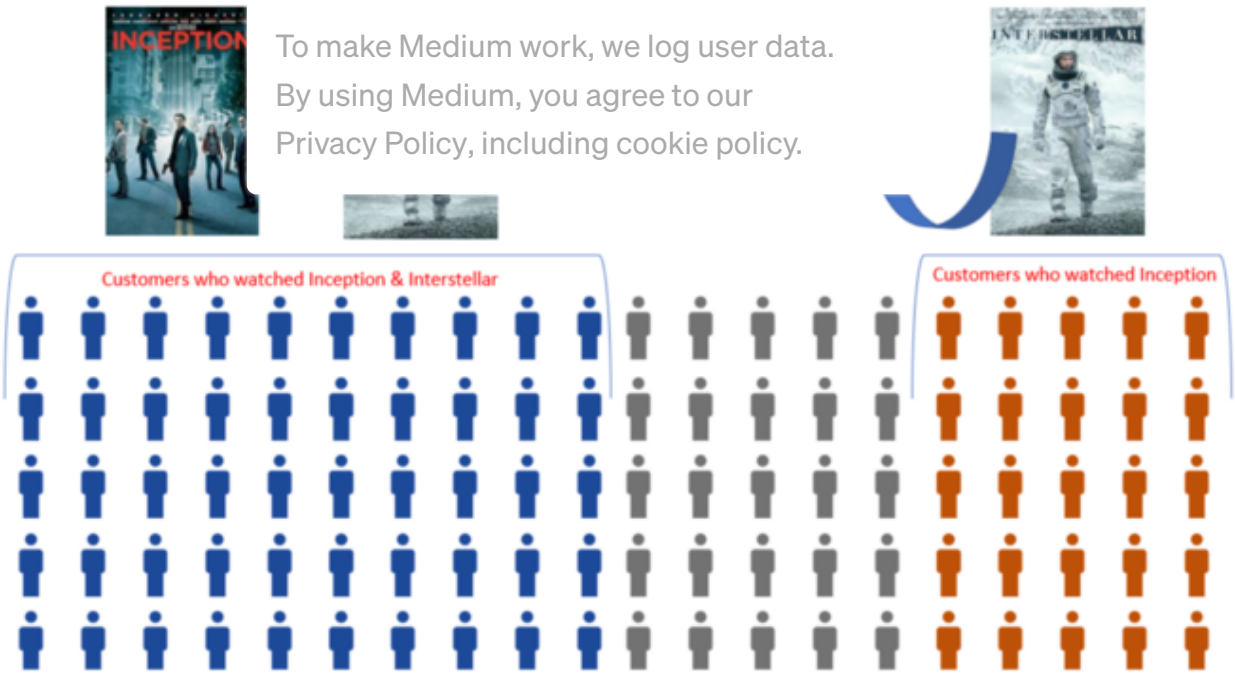
Customers will forget what you said,
Customers will forget what you did,
but they will never forget how you made them to buy products/items that they wanted to…. 😊

This article focuses mainly on beginners of machine learning who would like to understand the basics of recommendation system and what happens under the hood.

Download dataset & code from *here*

Customers who bought, also bought. Viewers who watched, also watched. Imagine, there are 100 customers who watched movies Inception & Interstellar. 25 customers watched Inception. Proactively generating (watch next) a movie list i.e Interstellar to those 25 customers *(watched Inception)* is called movie recommendation system.



Technically, introducing new content that has higher probability of customer watching it. This is achieved by information filtering system that seeks to predict the 'ratings or preference' an user would give to an item.

From the example above, the same group of customers would've watched n number of movies but the recommendation engine/algorithm would work in such a way **it will intelligently look at customers' ratings, likes, #of times watched etc to auto-streamline its list and recommend** the best next movie to watch.

> *Areas & industries where recommendation or recommender system is commonly recognized;*
> ***Retail especially e-commerce websites*** *like amazon, you see a line of products with* 'customers also bought' *tag. That is also an example of how machine learning leverages data(user's past purchases, ratings etc)to predict items.*
> ***Social media platforms*** *like Facebook and Twitter, — content recommendation system.*
> ***Video and music services*** *like Netflix, Prime, YouTube and Spotify uses this logic to generate playlist.*
> ***Food e-commerce*** *like Zomato & Swiggy where they list 'For you' and*

> *'Recommended' s* *ick on a restaurant.*
> ***Online dating p*** *ommonly recognized areas where recommendation system is widely used.*

People and scope

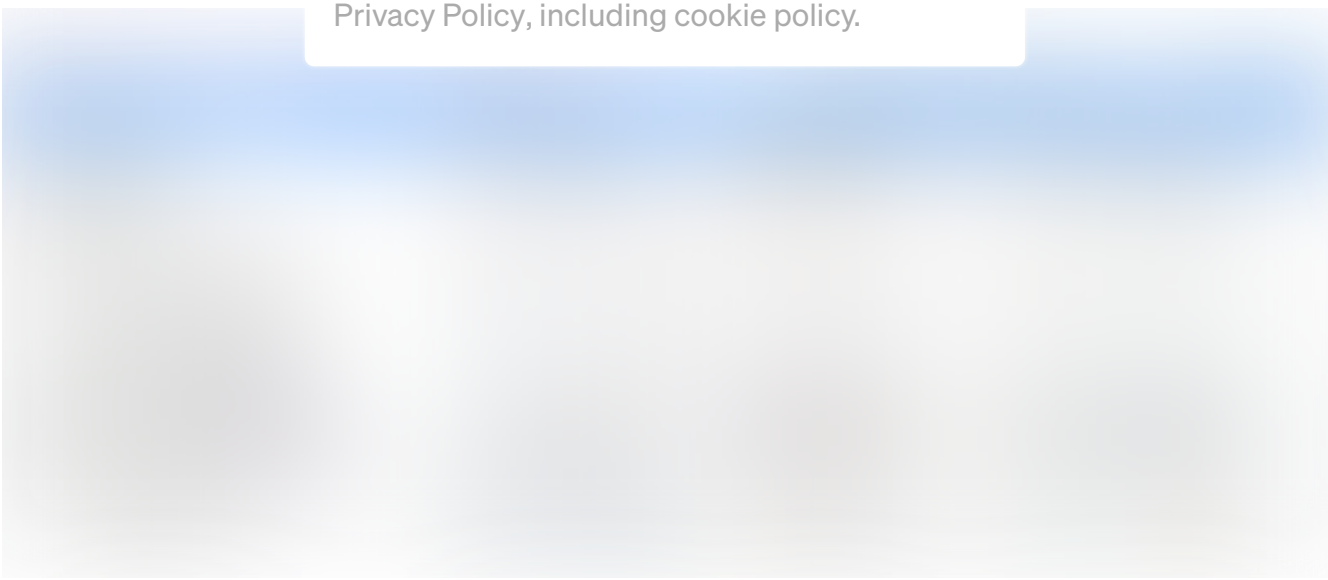
Well… now we understand the basics of recommendation system. Lets move on to see what are the platter of benefits this particular machine learning model brings to the table.
I will show insights of market basked analysis & optimization from my R studio window;

Screenshot from my R studio while I code and work on a prototype model using apriori algorithm of market basket optimization on a dummy dataset

Our customer, lets take the world-renowned food based superstore. As our global head expects some actionable insights, here is some from market basket analysis and ways we can optimize it.

Let us talk about some rule-based insights we can showcase and collaborate with our customer.

> *Insights #1: Cus ght 'Chicken'*



Association rule#1

Customers who buy light cream are inclined towards diet or health conscious and they prefer white meat. That is exactly what data proves too.
Hence we need to educate the store supervisor to place chicken near, where light cream is.

> *Insights #2: Customers who bought 'Pasta' also bought 'Escalope' & 'Shrimp'*

Association rule#2

People love asso ıere will be an
increased amou l these 3 (pasta,
escalope & shrin e insights to do
combo offers on these items.
Where are you pasta lovers ?
A big cheers to my foodie friends & colleagues who think about food, always.

> *Insights #3: Customers who bought 'herb & pepper' also bought 'Ground beef'*

Association rule#3

When we discuss insights on food, we can associate ourselves more onto the topic. Aren't we ? :-)

Customers who bought red meat also bought items (Herb & pepper, eggs, olive oil, spaghetti, sauce and mineral water).

Summary
Ok, this level of insights would definitely help superstore to streamline their way of dealing with products. Now they can shuffle the products as per our recommendations; place products next to each other;

observe & experi on the sales and
how much their s goals are
achieved. CSAT i atically.

Recommendation Engine Machine Learning Recommendation System

Data Science Towards Data Science