BUILD A RECOMMENDATION ENGINE

A hands on ML session for all

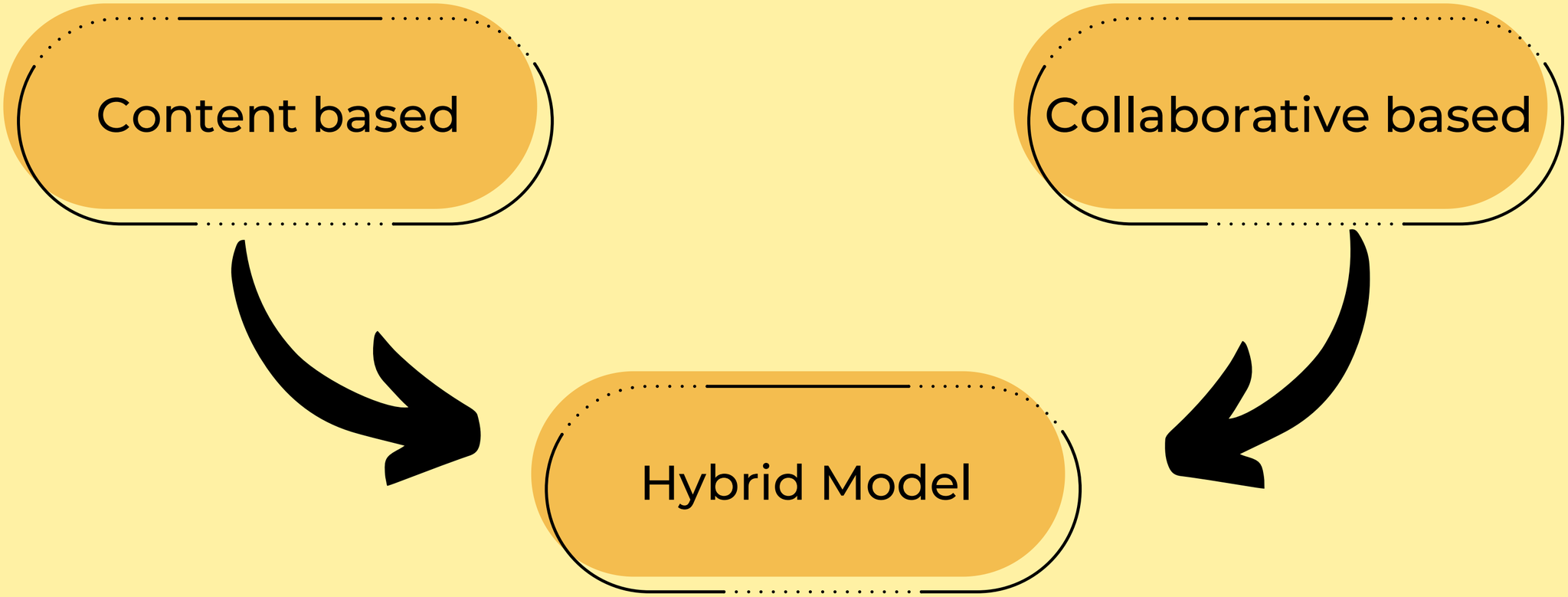
TODAY'S AGENDA

1. All about recommendation systems
2. Work flow explained
3. Hands on ML
4. Summary and future scope

What is a recommendation engine?

A recommendation engine is a type of data filtering tool using machine learning algorithms to recommend the most relevant items to a particular user or customer. It operates on the principle of finding patterns in consumer behavior data, which can be collected implicitly or explicitly.

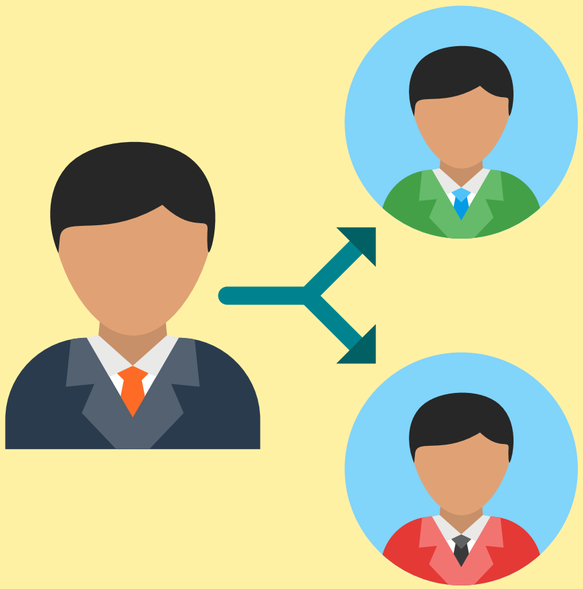
Types of recommendation systems?>



Content based recommendation

In this type of recommendation system, relevant items are shown using the content of the previously searched items by the users. Here content refers to the attribute/tag of the product that the user like. In this type of system, products are tagged using certain keywords, then the system tries to understand what the user wants and it looks in its database and finally tries to recommend different products that the user wants.

Collaborative based recommendation



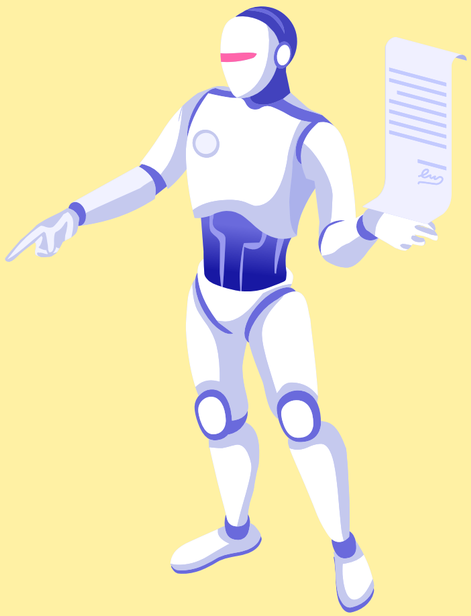
Recommending the new items to users based on the interest and preference of other similar users is basically collaborative-based filtering. For eg:- When we shop on Amazon it recommends new products saying “Customer who brought this also brought” as shown below.

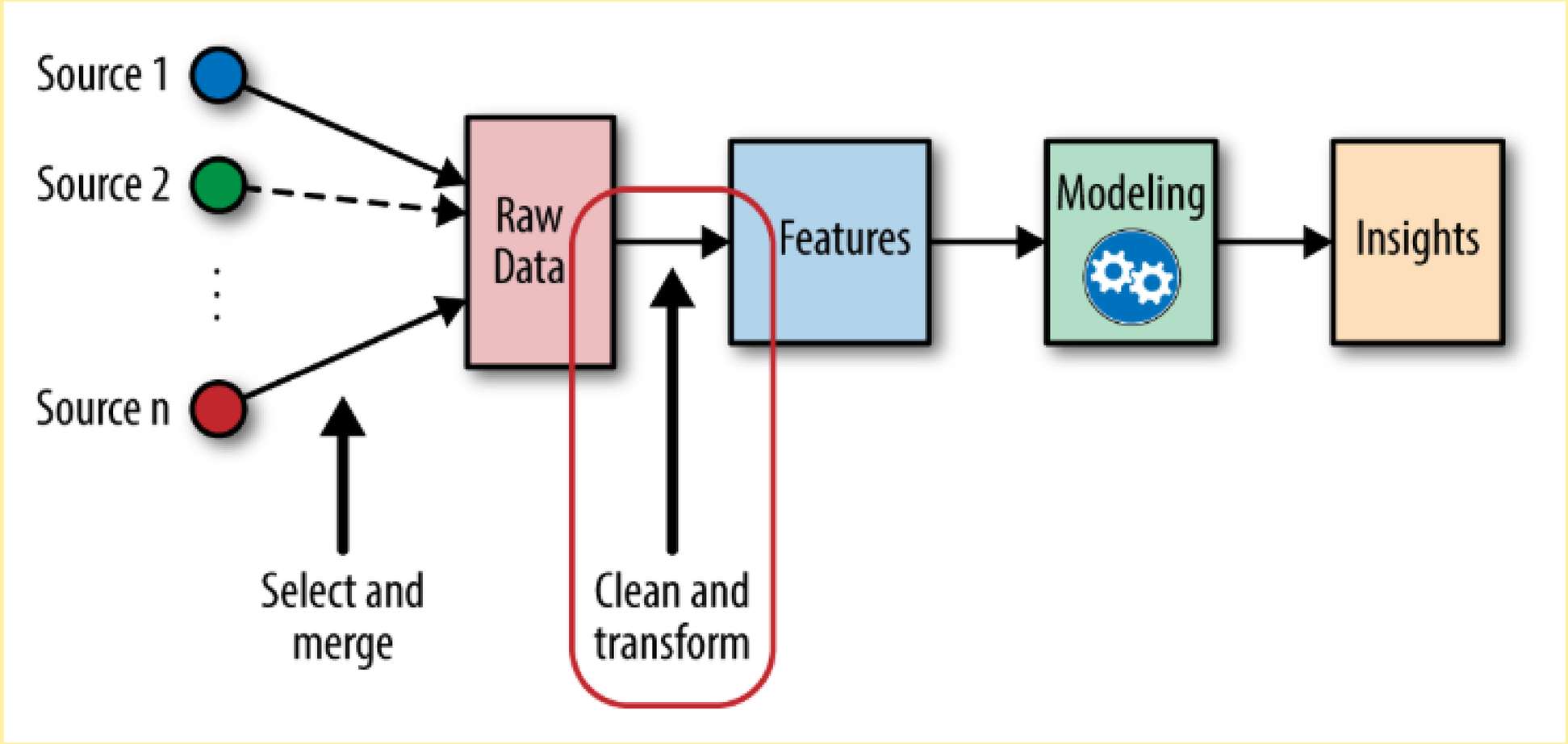
Work flow for our project

- Load the data
- preprocess data
- Feature extraction
- Apply NLP on data

Feature extraction

Feature extraction is the process of extracting features from a data set to identify useful information. Without distorting the original relationships or significant information, this compresses the amount of data into manageable quantities for algorithms to process.

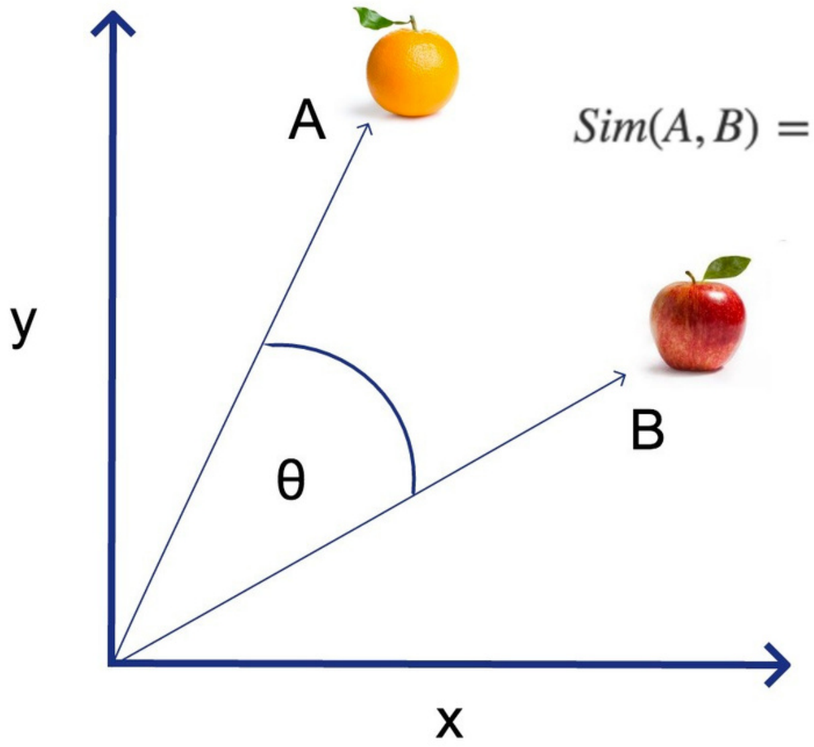



Source 1
Source 2
Source n
Raw Data
Features
Modeling
Insights
Select and merge
Clean and transform

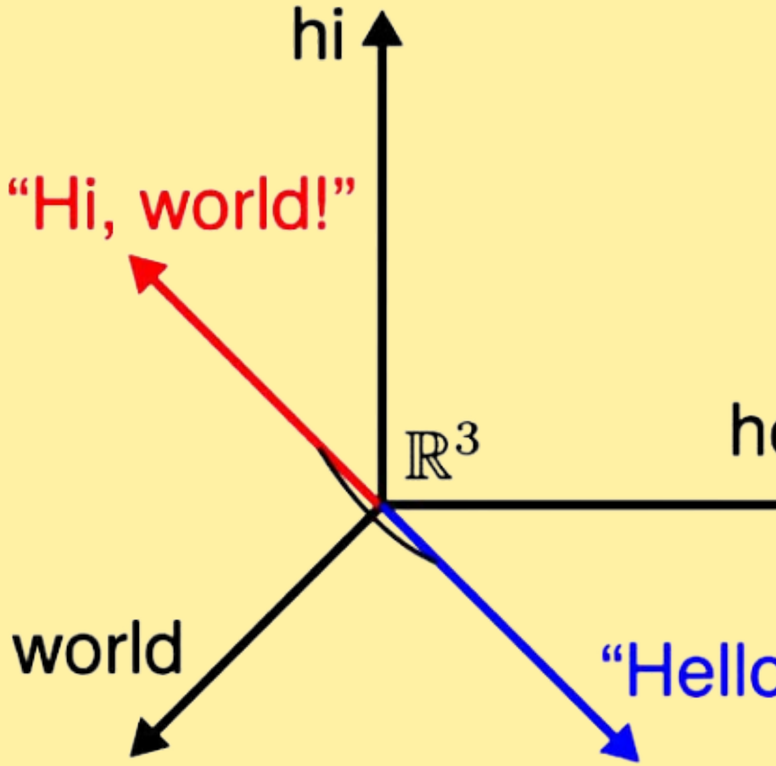
Cosine Similarity

Cosine similarity measures the similarity between two vectors of an inner product space. It is measured by the cosine of the angle between two vectors and determines whether two vectors are pointing in roughly the same direction. It is often used to measure document similarity in text analysis.

Cosine Similarity



$$Sim(A, B) = \cos(\theta) = \frac{A \cdot B}{\|A\| \|B\|}$$



Cosine Similarity

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Resources:

https://github.com/Genosisx/Awesome-ML/

Thank
you!