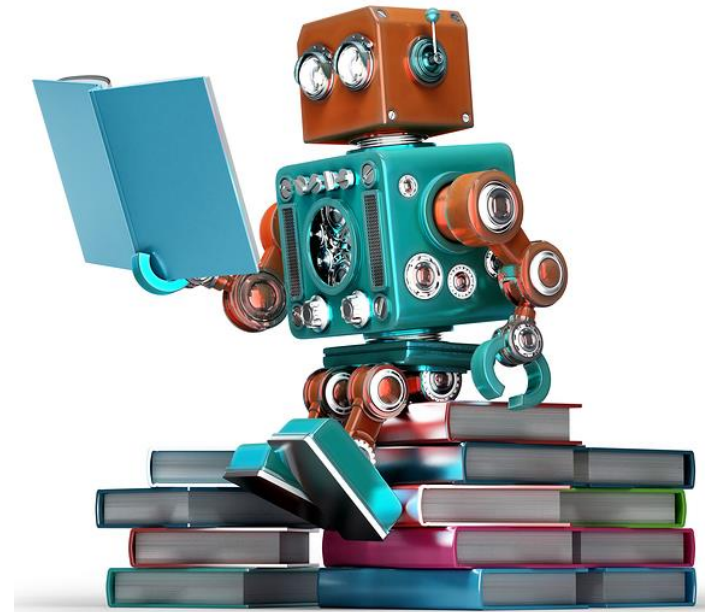


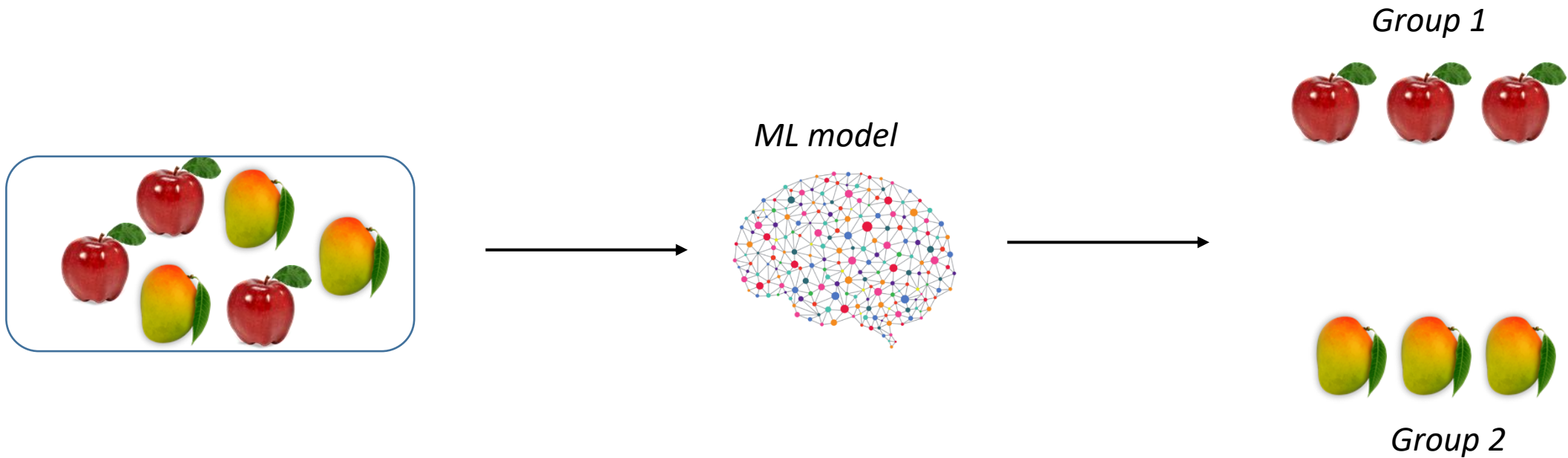
Siddhardhan

# Unsupervised Learning: Clustering & Association



# Unsupervised Learning

*In Unsupervised Learning, the Machine Learning algorithm learns from **Unlabelled Data***



# *Types of Unsupervised Learning*

## *Unsupervised Learning*

```
graph TD; A[Unsupervised Learning] --> B[Clustering]; A --> C[Association];
```

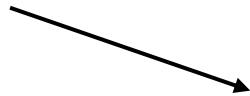
### *Clustering*

*Clustering is an unsupervised task which involves grouping the similar data points.*

### *Association*

*Association is an unsupervised task that is used to find important relationship between data points*

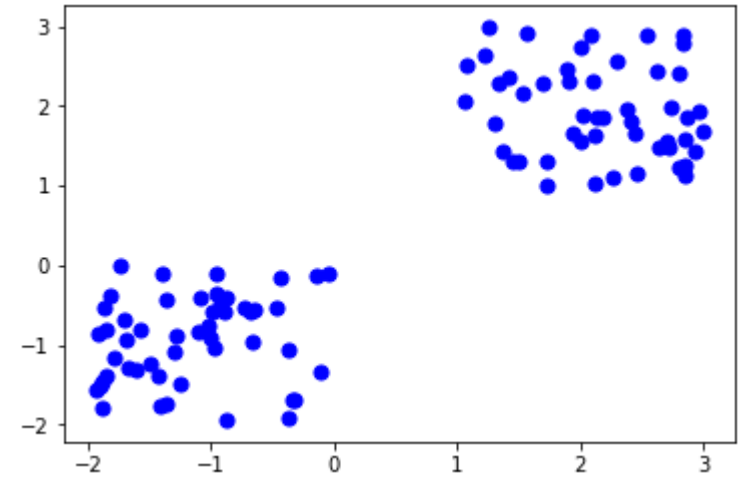
# Clustering



*ML model*

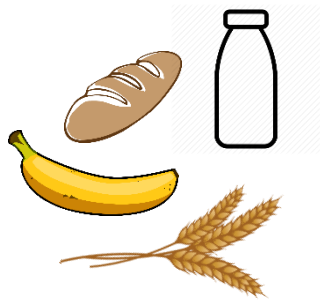


*Clusters*



# Association

Customer 1



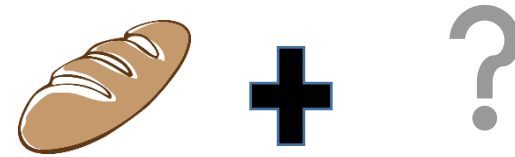
- Bread
- Milk
- Fruits
- wheat

Customer 2



- Bread
- Milk
- Rice
- Butter

Customer 3



*Now, when customer 3 goes and buys bread, it is highly likely that he will also buy milk.*

## Unsupervised Learning Algorithms

1. *K-Means Clustering*
2. *Hierarchical Clustering*
3. *Principal Component Analysis (PCA)*
4. *Apriori*
5. *Eclat*