

Feature

it has two parts

unit

Feature
selection

Feature
extraction

mean we have id-
entity ~~to~~ to select best
features

after finding best features
then we have to
feature extraction

to perform feature selection
and feature extraction we are
going to use

dimension reduction
technique (PCA)

* Suppose if we don't perform dimension reduction technique on high dimension dataset and like that if we use then

model centric → the model will become complex for us.

and that's why we use feature engineering if we perform then model will become

feature centric → simple.

* model - centric
↳ Builds complex models.

* Features - centric
↳ Builds simpler models.

(Note:- for feature centric use domain knowledge.)

* Feature Engineering example.

Suppose we have data like

- 1) time of current transaction
- 2) place of current transaction.
- 3) time of previous transaction
- 4) place of previous transaction.

Suppose one transaction happened at 10am on pune then suddenly another transaction happened just after 10:20am in USA New York

So this transaction is fraud but instead of having four variable to detect Fraud transaction we can come up with one like

$$\text{Velocity} = \frac{\text{Distance (previous} \rightarrow \text{current)}}{\text{time lag (prev} \rightarrow \text{curr)}}$$

So New defined feature for us will be

velocity