Support Vector Machine

MT21MCS013 Jay

Basically three category :

Separable

Non-Separable

Multiclass

Separable

Assume that data is linearly classifiable

Multiple planes exist

The one with the more margin is selected

Non-Separable

Drawing a plane or linear classification is not possible

Have to use zita(as slack) variable to satisfy the constraints

Fig.3   Fig.4

Linearly Separable   Not Linearly Separable

X_2 X_2
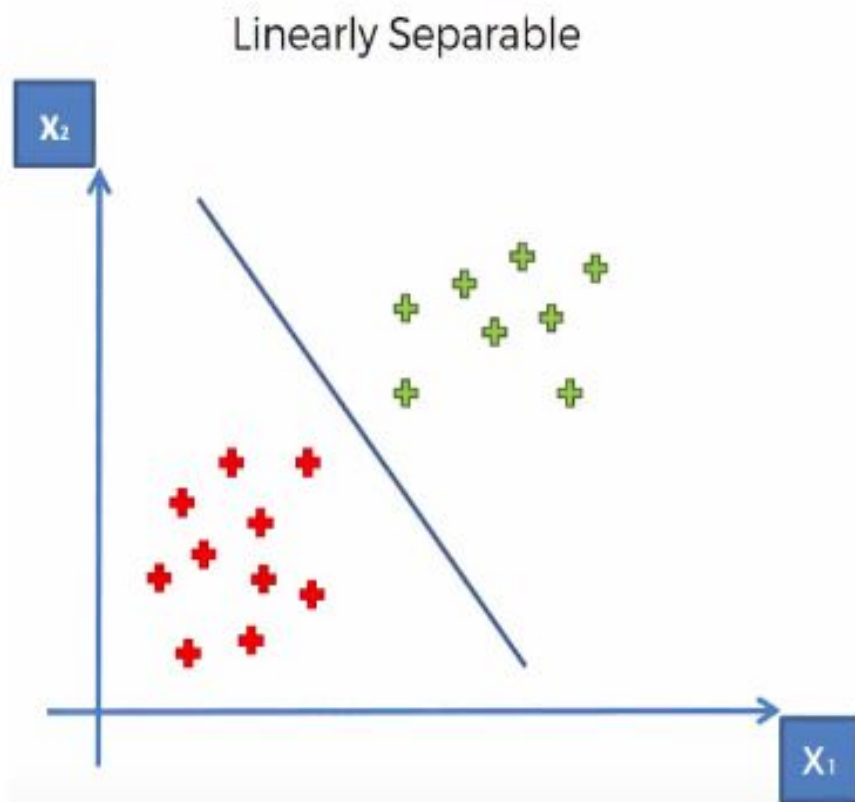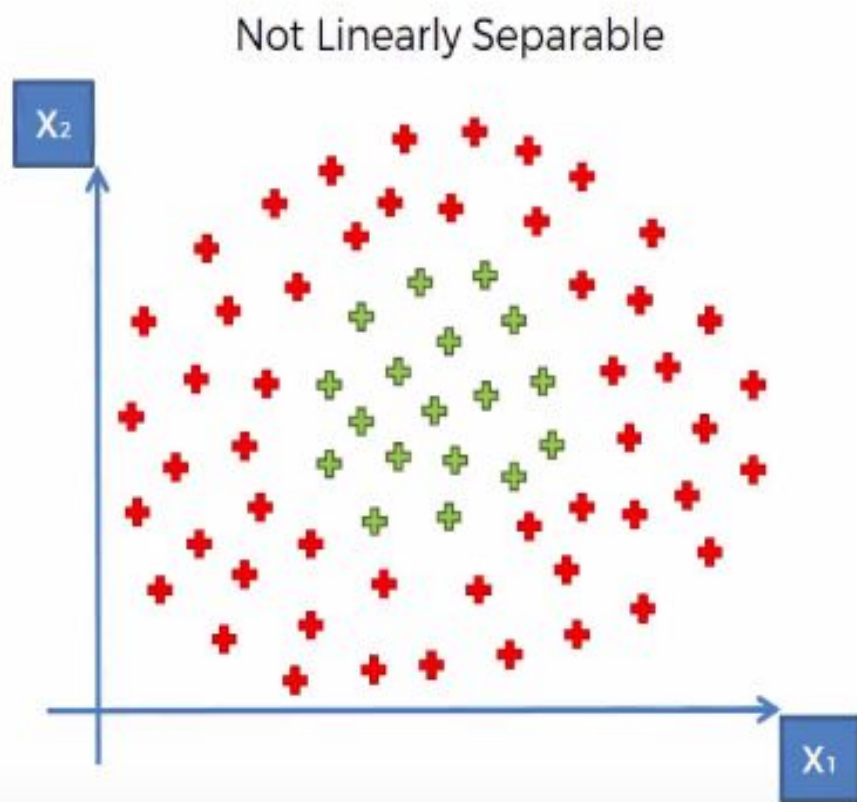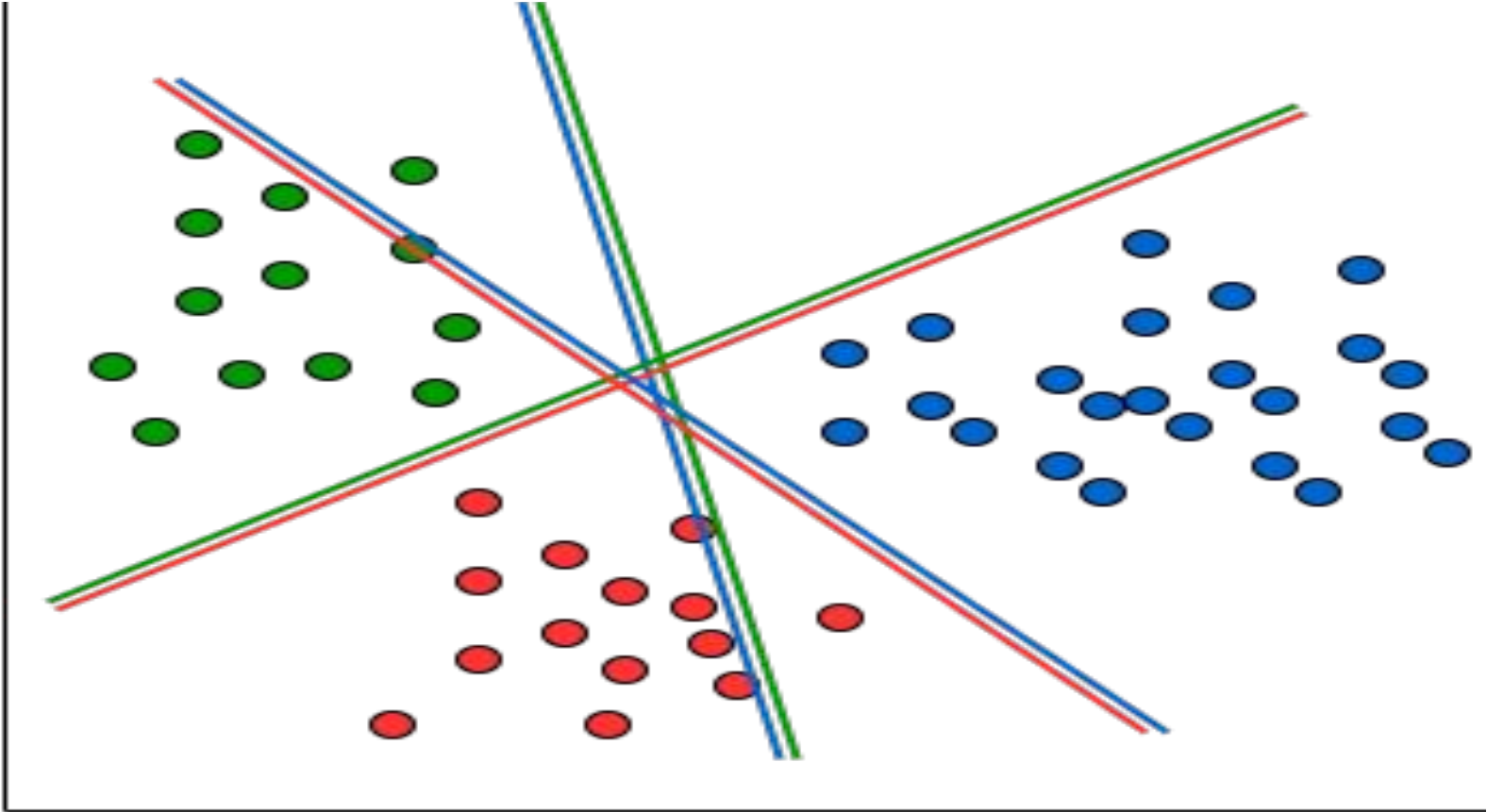
X_1 X_1

Multiclass classification SVM

Reference

[1] Image linearly separable and non linearly separable:

https://miro.medium.com/max/763/1*yAE4__VwfSOk9ohcMtccPg.png

[2] Image for multiclass SVM :

https://www.baeldung.com/wp-content/uploads/sites/4/2020/10/multiclass-svm2-e1601952762246.png