Support Vector machine   ML Algorithm
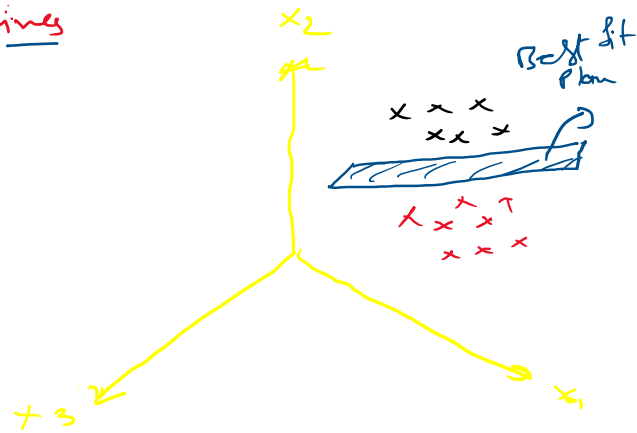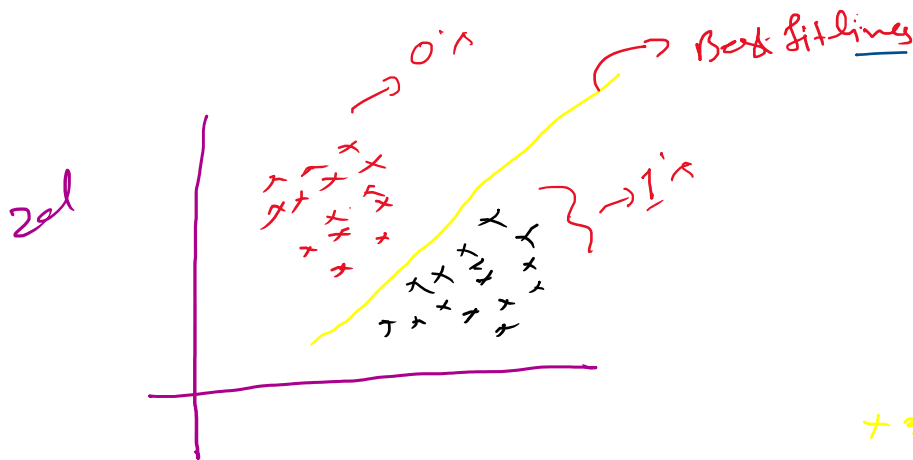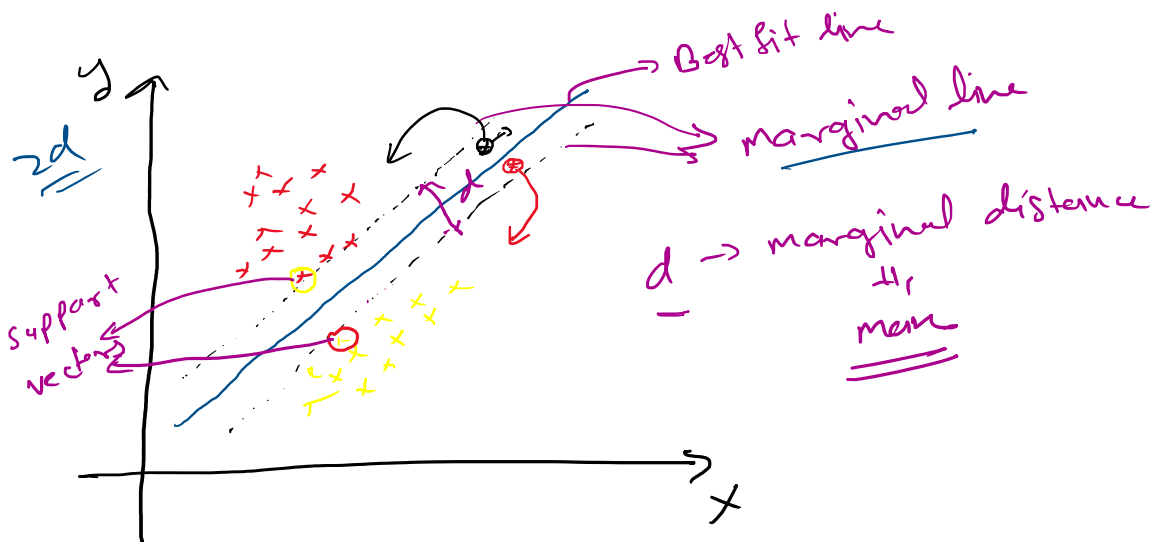
① SVC (Support vector classification) → Classification

② SVR (Support vector Regressor) → Regression

2d

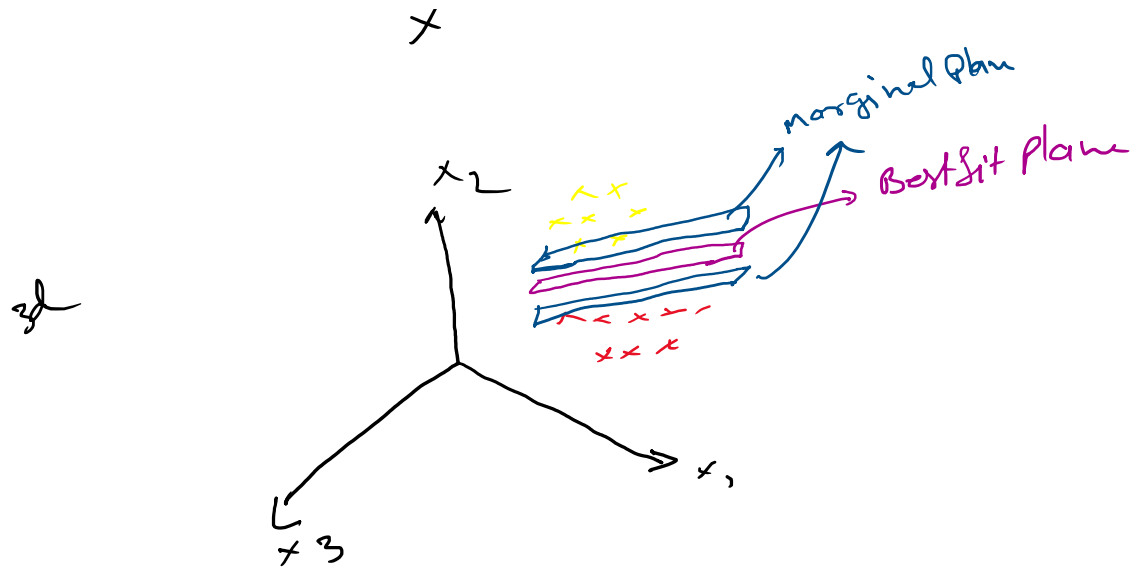→ 0's   → Best fitlines

→ 1's

x_2

Best fit
Plan

+3 x_1

① Support vector classifier (SVC)

2d

→ Best fit line

→ marginal line

d → marginal distance
H,
mean

support
vector

d_1, d_2, d_3

| (diagram: 3D coordinate axes x_1, x_2, x_3 with data points, marginal Plane and Best Fit Plane)

x

$3d$

x_2 — marginal Plane — Best Fit Plane

x_1

x_3

Soft margin & Hard margin in SVC

(diagram: 2D plot with best fit line, margins d, red and yellow data points, dashed marginal lines)

→ Best fit line

d
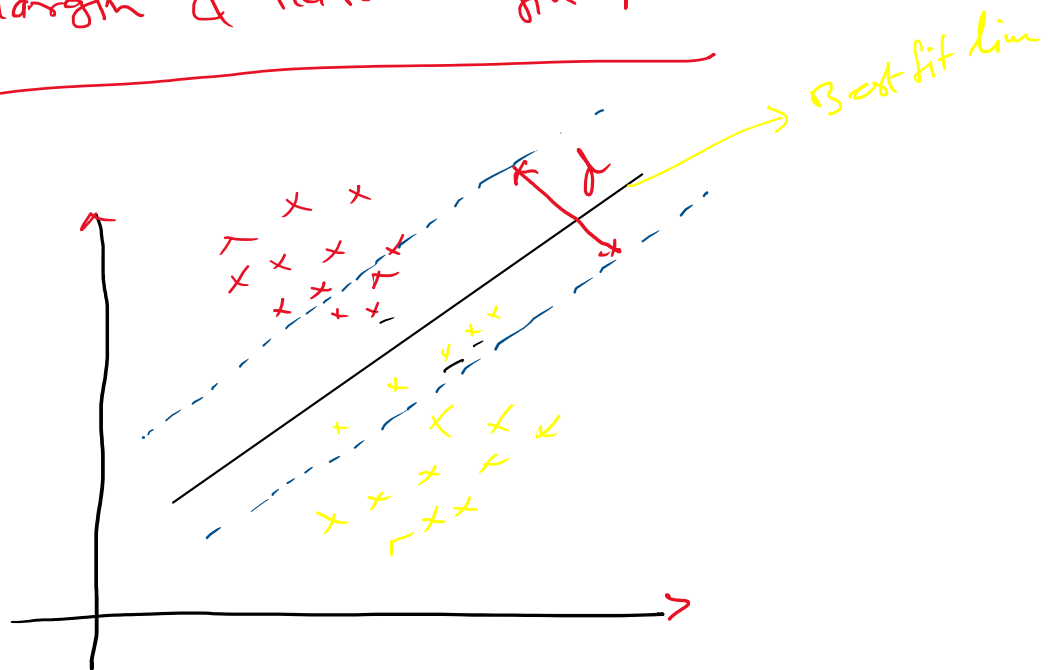
Hard margin → Non of the data points are misclassified

Soft margin → Some data points are misclassified [error]

→ marginal line
best fit line

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misclassi ''

marginal line
Best fit line

Hard margin

Soft margine