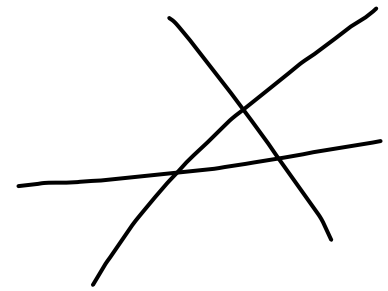


1) Logistic Regression

$$P(y_i = 1 | X) = \Delta(x'\beta)$$



One vs All



Pairwise comp.

Multinomial model

LK: $y \sim \text{Bernoulli}(\quad)$

MM: $y \sim \text{Categorical}(\dots)$

2) LDA :

Likelihood
↓

prior: $\frac{N_k}{1/G_i \cdot N}$
↓

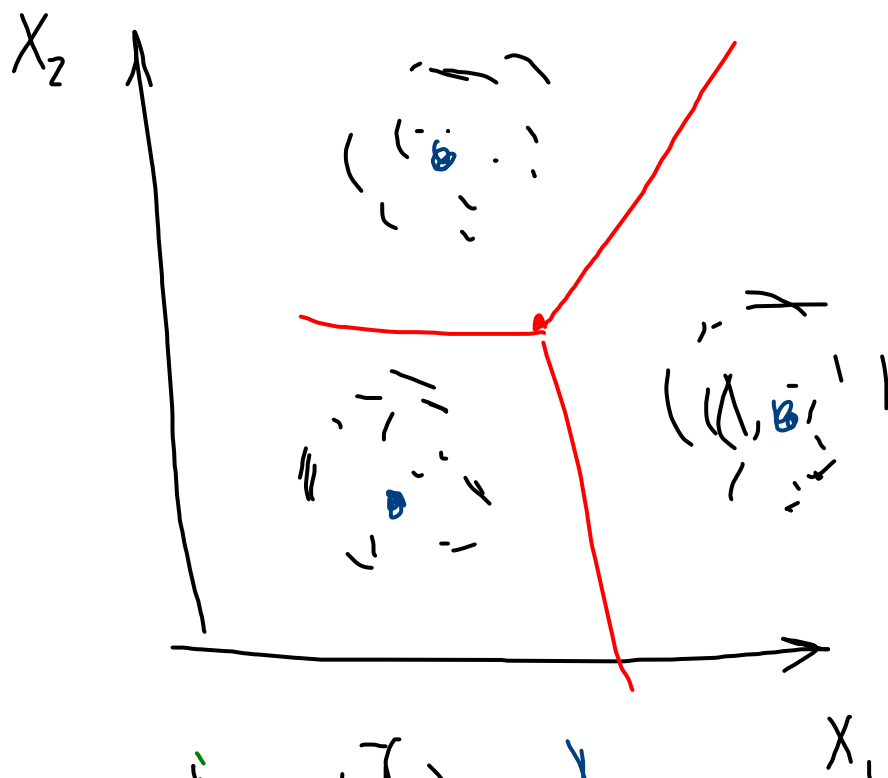
$$P(y_i = i | X) = \frac{P(X | y_i = i) \cdot P(y_i = i)}{P(X)}$$

↑
posterior
prob.

↗
data

G-1

$$\Sigma_1 = \dots = \Sigma_K$$



3) PCA

- max Var .

↳ # variables

LDA

$$\frac{\text{Bctw.V}}{\text{within}} \quad \frac{\sum (\mu_k - \bar{\mu})^2}{\sum \sum (\mu_{ki} - \mu_k)^2}$$

$$\rightarrow \max \Rightarrow G - 1$$



$$R^2 = \frac{ESS}{TSS}$$

$$C = \sqrt{\frac{ESS}{TSS}} = \left(\sqrt{R^2} \right) = \sqrt{\frac{\gamma}{1+\gamma}}$$

$$\Delta = \left(1 - R^2 \right) = \frac{RSS}{TSS}$$

$$\chi^2 = - \left(700 - \frac{7 + 2}{2} - 1 \right) \cdot \ln(0,7)$$

$$\sim \chi^2_{7 \times (2-1)}$$

\nearrow \uparrow
 $\# \text{ var.}$ $\# \text{ DF}$

1) Stand. can. coef.

$$b_j^* = b_j \cdot s_j$$

↑ ↓
coef from DF std.
for var. j for var. j

2) Discriminant loadings
(structural corr.)

corr. (Var_j, DF)

$$\text{Hit Ratio} = \frac{TP + TN}{N}$$

Orig.:

$$\frac{393 + 139}{517 + 183} \approx 0,7$$

c.v.:

$$\frac{391 + 136}{517 + 183} \approx 0,65$$

