Class 3

Raw Data -> Feature extraction -> Feature Vector -> Feature space

- ω: classes in the feature space
- y: output of the pipeline

Process of learning is learning the separator between the classes.

We saw kNN (which tried to learn without learning the decision boundary).

Maximum Likelihood Estimate (MLE)

Find $P(x|\omega)$ from $P(\omega|x)$ (Bayes' rule) And assign the class with MLE to x.

even for continous random variable X, this will hold as follows:

$$P(\omega_i|x) = \frac{p(x|\omega_i)}{p(x|\omega_1) + p(x|\omega_2)}$$