2.2.3 Bayes and Naive Bayes Classification

Now we consider non-parametric models for classification, i.e. in contrast to the previous approaches, we do not try to determine the parameters of a separating hyperplane or a neural network. Instead, we aim to use the data to approximate their distribution.

To motivate this, consider the training dataset

Class:	Weight:	Color:
Apple	162g	red
Apple	186g	yellow
Banana	112g	yellow
Banana	142g	green
Banana	128g	yellow

Table 2.1: Fruit Dataset

We want to use this data to classify a new fruit, e.g. $x = (195g, \text{yellow})$. What do you think, is it more likely to be an apple or a banana?

Subtopics: 2.2.3.1 Bayes Classification