

Homework 1: Machine Learning

Exercise 1

We have:

A: Predict after testing.

B: Given

0: negative

1: positive

$$P(B = 1) = 0.05, P(B = 0) = 0.95$$

$$P(A=1 | B = 1) = 0.98$$

$$P(A = 1 | B = 0) = 0.03$$

$$P(B = 1 | H = 1)$$

$$= [P(A = 1 | B = 1) * P(A = 1)] / (P(B = 1))$$

$$= [(0.05) * (0.98)] / [(0.05) * (0.98) + (0.95) * (0.03)]$$

$$= 0.623$$