

Spam filter

Week1-ex1, problem statement

This exercise, with many alternative stories and numerical values, is a classical example of the importance of prior information and of taking into account the baseline prevalence.

Erik knows that 65% of his emails are spam. Spam filter classifies 75% of spam to be spam. Furthermore, filter classifies 6% of emails as spam even if they are not spam. What is the probability that an email classified as spam is not spam?

Grading

Total 10 points: 3 points if prior and likelihood have been defined correctly. Extra 4 points if the Bayes Theorem has been formed correctly. Extra 3 points if the result is correct.