Workshop Week 10 - COMP20008 2021SM1

1. Consider the following data set for a binary class problem:

Feature A	Feature B	Class Label
T	F	+
T	T	+
T	T	+
T	F	-
T	T	+
F	F	-
F	F	-
F	F	-
T	T	-
F	F	-

We wish to select the feature that best predicts the class label using the χ^2 method.

- Write down the observed and expected contingency tables for feature A
- Calculate the $\chi^2(A, Class)$ value.
- Using the table below, conclude whether feature A is independent of the class label for $p = 0.05$.

df	P = 0.05	P = 0.01	P = 0.001
1	3.84	6.64	10.83
2	5.99	9.21	13.82
3	7.82	11.35	16.27
4	9.49	13.28	18.47
5	11.07	15.09	20.52
6	12.59	16.81	22.46

- Repeat the process for feature B and decide which feature could be best used for predicting the class label.