

$$1. \text{ Accuracy rate classifier 1} = \frac{8+12+6}{7+1+1+12+2+6} = 0.8667$$

$$\text{" " classifier 2} = \frac{7+13+7}{7+2+13+1+7} = 0.9$$

i.e. classifier 2 Accuracy rate is more

2. Classifier 1

$$2.1 \text{ precision} = \frac{TP(a)}{\text{predict}(a)} = \frac{TP}{TP+FP} = \frac{8}{8+1+0} = 0.8889$$

$$2.2 \text{ Recall} = \frac{TP(a)}{\text{Actual}(a)} = \frac{TP}{TP+FN} = \frac{8}{8+1+0} = 0.8889$$

$$2.3 \text{ F-measure} = \frac{(2 \times \text{precision} \times \text{recall})}{(\text{precision} + \text{recall})}$$

$$= \frac{2 \times 0.8889 \times 0.8889}{0.8889 + 0.8889} = 0.8889$$

classifier 2

$$2.4 \text{ precision} = \frac{7}{7+0+0} = 1$$

$$2.5 \text{ Recall} = \frac{7}{7+2+0} = 0.7778$$

$$2.6 \text{ F-measure} = \frac{2 \times 1 \times 0.7778}{1 + 0.7778} = 0.875$$

2.7 classifier 1 gives TP rate or recall is more

classifier 2

Classifier 1

	predic -	predic +	predic neutral	
Actual -	12	1	0	FN
Actual +	1	8	0	TN
Actual neutral	2	0	6	

TP, FP, FN, TN labels are placed near the corresponding cells in the original image.

$$3.1 \text{ FP rate} = \frac{\text{FP}}{\text{actual}(na)} = \frac{\text{FP}}{\text{FP} + \text{TN}} = \frac{1+2}{1+2+8+0+0+6} = 0.1765$$

$$3.2 \text{ FN rate} = \frac{\text{FN}}{\text{actual}(ca)} = \frac{\text{FN}}{\text{TP} + \text{FN}} = \frac{1+0}{12+1} = 0.0769$$

Classifier 2

	predic -	predic +	predic neutral	
Actual -	13	0	0	FN
Actual +	2	7	0	TN
Actual Neutral	1	0	7	

TP, FP, FN, TN labels are placed near the corresponding cells in the original image.

$$3.3 \text{ FP rate} = \frac{\text{FP}}{\text{actual}(na)} = \frac{\text{FP}}{\text{FP} + \text{TN}} = \frac{2+1}{7+0+0+7+(2+1)} = 0.1765$$

(Note: The denominator in the original image includes a circled '2+1' labeled 'FP'.)

$$3.4 \text{ FN rate} = \frac{\text{FN}}{\text{actual}(ca)} = \frac{\text{FN}}{\text{TP} + \text{FN}} = \frac{0+0}{13+0} = 0$$

3.5 ယခင်က classifier ကိုသေချာစွာ FP rate ချိန်

3.6 classifier 1 ကိုသေချာစွာ FN rate ချိန်