

## Gruppeteilnahme

Long Dao Thanh      10042932

Van Hung Do          10048983

## Kontrollfrage

- a) Warum wird der  $\chi^2$  Test zum Vergleich zweier Histogramme verwendet? Wann liefert der Test den Wert 0 bzw 1?

=>  $\chi^2$  Test (Chi Square Test ) used to measure to correlation of difference histogram based not only on the distance of point in both histogram in each bin, but also its relation of both histogram ( in this exercise is the relation between every pixel from each label to its center point )

=> With value of 0 tells  $\chi^2$  Test that both Histogram identical. With the value of 1 says  $\chi^2$  Test that both Histogram significant different

- b) Was beschreibt die Konfusionmatrix ? Welche Ziffern sind einfach zu klassifizieren, welche Ziffern sind schwieriger zu unterscheiden ? Warum?

=> Konfusionmatrix tell you which Number from Test Dataset is correctly detected.

The number of the Diagonale of the matrix is number of time that Number got correctly detected

The number outside Diagonale of the matrix is number of time that Number got wrongly detected

=> Number "3" can easily got correctly detected, because its histogram is unidentical compare to the other

Number "1" might be mistaken to number "7", number "6" might be mistaken to number "0". It can be proved when compare 2 of these Histogram.

- c) Beschreiben Sie das Distanzmaß  $D(P, Q)$  aus Aufgabe 2 b ii)

=> D describe to Differential between 2 Histograme P and Q

d) Ist der Shape Deskriptor invariant gegenüber Translation, Rotation und Skalierung, d.h können Objekte in beliebiger Lage und Größe verglichen werden? Falls nicht, wie kann eine Invarianz erreicht werden?

=> Shape Descriptor is not ( and also unnecessary ) invariant under all transformations. This means, object with the same shape may have different shape descriptor depending how it is translated, rotated or scaled.

=> Moment invariants is 1 method of Shape Descriptor, that achieve the requirement of Invariant. It was done by using integrals over the intensity function to calculate the moment of object's intensity, then these integrals are used to calculate the moment invariant.