

RBE549 - Homework 8

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Problem 1

In this problem we are asked if we have two binary images, I_1 and I_2 , we want to show that that $|I_1 - I_2|^2 = \sum \#$ of all pixels where $I_1 \neq I_2$, with $|I|^2 = \sum i_{jk}^2$ as the sum of all pixels squared in I .

First, we define that binary images are images that have the possible values of $(0, 1)$. Thus we have only a few possibilities for any given pixel amongst our function.

- $I_1 = 0, I_2 = 0$: 0
- $I_1 = 1, I_2 = 0$: 1
- $I_1 = 1, I_2 = 1$: 0
- $I_1 = 1, I_2 = 0$: 1, as we square the result of the absolute

Thus we see that, because of the $|result|^2$, wherever both I_1 and I_2 are 1 where the other is 0, we end up with a 1 value. Wherever $I_1 \cup I_2$, or both are 1, we result in an outcome of 0.

Problem 2

In this problem we are exploring Bayesian classifiers.