

Analysis of Block Matching Algorithms for Image Transformation

ADA Final Project: Questions 5 - 10

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Previous Presentation

In the previous presentation we designed **two algorithms** for block matching:

- Greedy / Naive Algorithm
- Memoized Algorithm (now improved to DP version).

For this last part we are including a third algorithm, a DP with **better weight**.

We are gonna see how each of this performs for image transformation.

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What is Luma?

Luma represents the relative luminance of an image. It is often used in video engineering. It is calculated with various coefficients, some of which are:

- CCIR 601
- BT. 709
- SMPTE 240M

These are the ones used in our implementation.

Transforming into a Matrix of bits

To transform our images into matrices of bits, we will use the result of calculating the luma of each pixel. What determines if the bit goes to 0 or 1 is another parameter passed to our function. We repeat this for every pixel of both images, if the luma is equal or greater than our value, the value is set to 1. Otherwise it is set to 0.

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