

Master VICO – Lab on Video Coding

Block Matching

Goals:

The goal of this lab is to compute a block matching algorithm for the purposes of illustrating the motion estimation in video coding.

The purpose of a block matching algorithm is to find a matching block from a frame I in some other frame J , which may appear before or after I . This is used to exploit the temporal redundancies in a video sequence, by increasing the effectiveness of inter-frame video compression.

To do:

Study and complete the (simple) block matching algorithm coded in Matlab.

Questions :

Explain what are:

- the reference frame
- the target image
- the research window
- the target block

On which frame component the motion estimation is compute?

How is computed the errors (difference between blocks)? Are there other possible methods?

What is the problem at the frame border? What solution has been proposed here?

The search in the B window is exhaustive. What does it mean? What is the issue?
