



Computer Vision System Toolbox

(I)

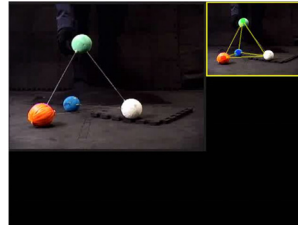


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Objective

Present feature recognition



Future feature recognition

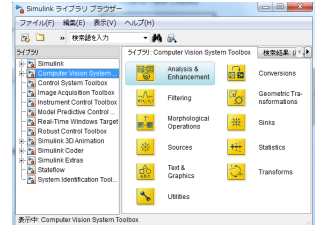


Image processing tool

OpenCV (library of C language) → Computer Vision System Toolbox

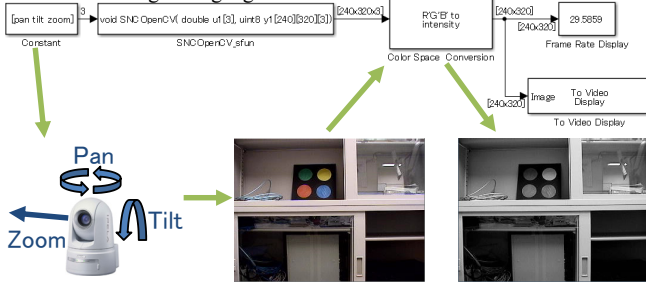
Recognizing

Feature points by color → Features by color, edge, etc



Experimental Environment

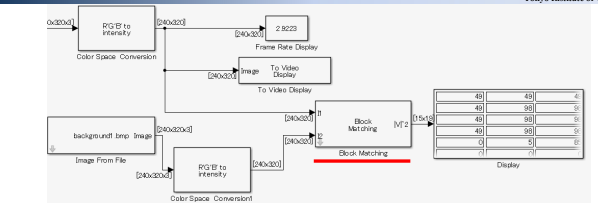
Using C language here



Still using C language for control input and image capture, but not for image processing.



Block Matching



background1.bmp

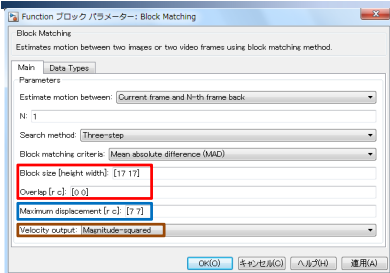


Captured frame

Estimate motion



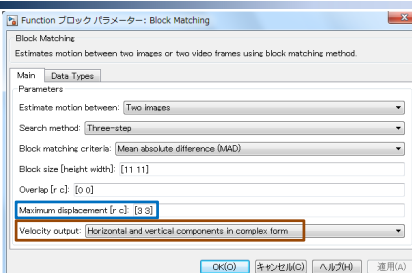
Block Matching



1. Subdivide image into block.
2. Establish search region.
3. Search for the new block location.
4. Output velocity.



Block Matching



Frame rate: 5.7fps

To shorten execution time, smaller Block size, Overlap and Maximum displacement are better.

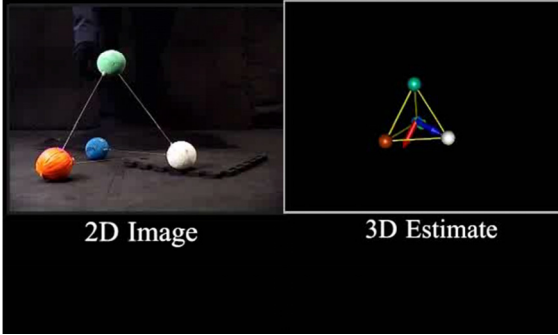
For noise reduction, Maximum displacement should be larger than [3 3].

Either type of Velocity output does not affect execution time much.



Report of VMO Experiment

Tokyo Institute of Technology



2D Image

3D Estimate