程式流程說明

main8.cpp:78 KNN_set::prepare()

do KNN algorithm (with K = 2) to find KeyPoints relationship between object image and target image.

main8.cpp:79 RANSAC::best_model()

Repeatedly, generate model with choosing random 3 points on object KeyPoint set and finding Affine mapping matrix. Calculate the number of inliers this model. Records the best_model which has the most inliers. Return the best model when the anealing climb to achieve 100.

inliers

given object KeyPoint Set Obj = {k1,k2,… kn}, all points in Obj has 2 nearest neighbor NN(1) = {n1,n2}. With model matrix M we can find the corresponded coordinate from object image to target image: k'1 = M * k1. If the min of distances between k'1 and n1/n2 smaller then thredshold (10.0 in this case). We said this is an inlier.

Anealing

you can find this variable at src/RANSAC.cpp:107. This floating point number will control how many times the ransac algorithm should repeat and how wide the range the random_select(src/RANSAC.cpp:78) to select the KeyPoint from. scoreBoard(src/scoreBoard.h) records an array sort from higher inlier count KeyPoint to lower inlier count KeyPoint.

main8.cpp:81 RecoveryShow_backward()

do backward warping with the model finded by RANSAC.

config

doing parameter control of my program

recoveryType:[backward|forward]

object_in/target_in : input files

object_out/target_out/result_out : output files

如何編譯 執行

$ mkdir build;cd build

$ cmake ..; make

“於 config file 指定 input file, output file 及 backward/forward”

“若無指定 則會使用 main8.cpp 中的預設路徑”

$ ./build/test_cs_vs_project [config]