// disp2Depth.cpp : 此文件包含 "main" 函数。程序执行将在此处开始并结束。

//

#include "pch.h"

#include <opencv2/opencv.hpp>

#include <highgui.h>

#include <cv.h>

#include <cxcore.h>

#include <iostream>

using namespace std;

using namespace cv;

/\*

函数作用：视差图转深度图

输入：

　　dispMap ----视差图，8位单通道，CV\_8UC1

　　K ----内参矩阵，float类型

输出：

　　depthMap ----深度图，16位无符号单通道，CV\_16UC1

\*/

void disp2Depth(cv::Mat dispMap, cv::Mat &depthMap, cv::Mat K)

{

int type = dispMap.type();

float fx = K.at<float>(0, 0);

/\*float fy = K.at<float>(1, 1);

float cx = K.at<float>(0, 2);

float cy = K.at<float>(1, 2);\*/

float baseline = 65; //基线距离65mm

if (type == CV\_8U)

{

/\*const float PI = 3.14159265358;\*/

int height = dispMap.rows;

int width = dispMap.cols;

uchar\* dispData = (uchar\*)dispMap.data;

ushort\* depthData = (ushort\*)depthMap.data;

for (int i = 0; i < height; i++)

{

for (int j = 0; j < width; j++)

{

int id = i \* width + j;

if (!dispData[id]) continue; //防止0除

depthData[id] = ushort((float)fx \*baseline / ((float)dispData[id]));

}

}

}

else

{

cout << "please confirm dispImg's type!" << endl;

cv::waitKey(0);

}

}

int main()

{

Mat disp8 = imread("left\_disp.png",0);

Mat depth;

Mat K = (Mat\_<float>(3,3)<<3329.13,0,1971.41,0,3326.41,1478.27,0,0,1);

namedWindow("disp", 1);

imshow("disp", disp8);

disp2Depth(disp8,depth,K);

namedWindow("depth", 1);

imshow("depth", depth);

imwrite("depth.png", depth);

waitKey();

cvDestroyAllWindows();

return 0;

}

