NTUST course: Computer Vision and Applications (CI5336701, 2022 Spring)

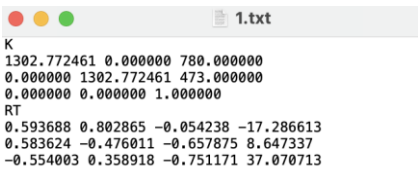
Homework#1：Draw the trajectory of a list of 3D points on images

Date Due：2022. Mar. 25, PM11:59。 (~2 weeks)

Description：

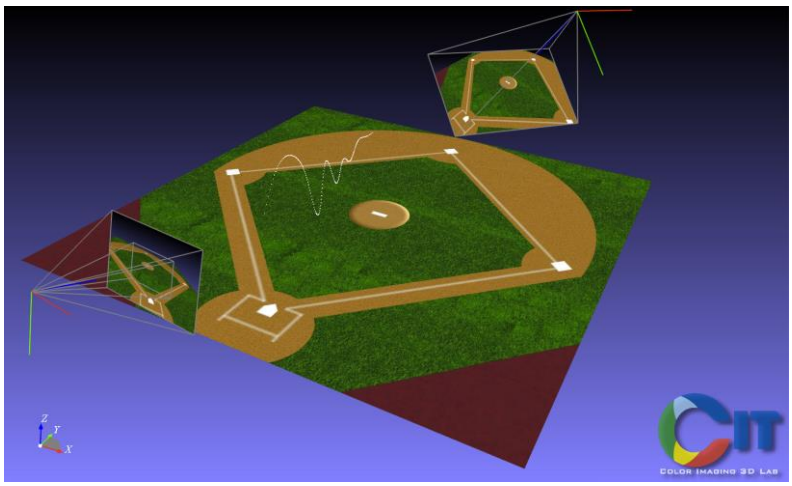
1. Writing programs for reading images, then drawing projected points on every image. A list of 3D points is given in a text file named trajectory.xyz. And three images taken in virtual environment with known camera parameters (as one corresponding .txt file) are also provided. (Please choose one programming language you prefer, ex. C++/C, python, Matlab).
2. Your program should have the following features:
   1) Able to read the given image, and its corresponding parameters
   2) Read the text file (named trajectory.xyz)
   3) Do matrix multiplication (ex. **x**=**K**[**R**|**T**]**X**)
   4) Draw projected 2D points on images.
   5) Save those images in Step-4.

   There are three sample images that you can verify.



3. There are three types of data you should upload to moolde2.ntust.edu.tw by date due
   1) Source code in C++/C, Matlab, python, with simple comment.
   2) Execution file (.exe, if appliable).
   3) Your result images (correct trajectory on images

Hint: Overall layout of cameras and virtual 3D environment. Imagine what photo contents you should have.



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