

IC5303 Computer Vision

Program Assignment #1: Camera calibration from 3D calibration rig

due date: October 31, 2017, email to: kjyoon@gist.ac.kr

- Calibrate a virtual camera that captures a 3D calibration rig as shown in Figure 1 below. The rig is placed at the origin of the world frame. In addition, planes for the rig are orthogonal, and the axis of the world frame and the lines of intersections of planes are shared. The width and height of each square for the check board is set to be 12cm.

From these settings, estimate an intrinsic matrix (K), a rotation matrix (R), and a translation vector (t). For coordinates of corresponding 2D points to 3D points, you could gather the position of each points by hand. To check sanity of your code, compare the estimated position of a camera center in the world frame with ground truth ($X= 166.20$, $Y=141.46$, $Z=170.08$).

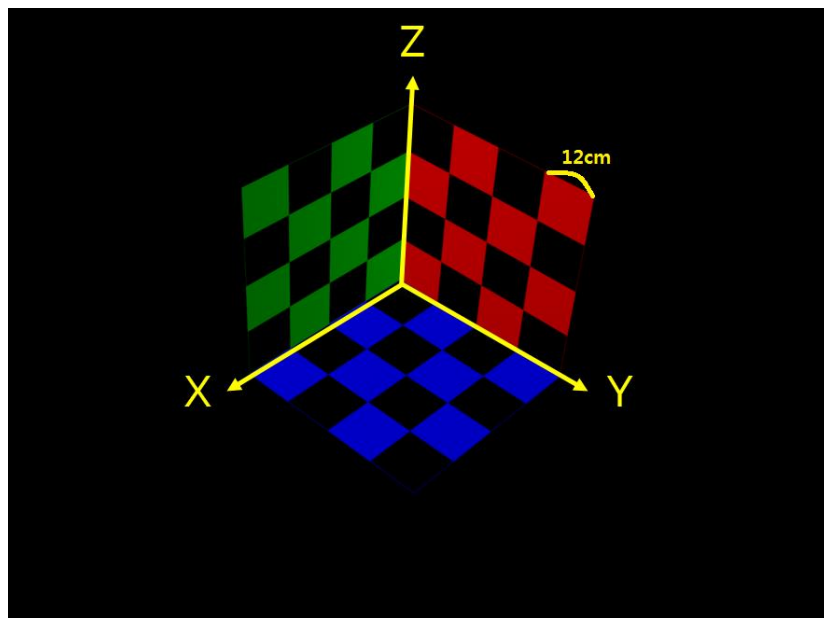


Figure 1 Image for calibration (For calibration, should use the 'pattern.png' file.)