

CMPS 260
Camera Calibration
Assignment 4
Target Date: May 18, Thursday, 10:00am

Form groups of 1 or 2. Use a method of your choice to calibrate a pinhole camera. As extra credit, use two different methods and compare them.

Camera Calibration:

1. Tsai Grid: You can use a Tsai Grid to compute the camera matrix using the correspondence between 3D World points and 2D image points. This method is described in the book.
2. Zhang's Method: You can use the Zhang's method for computing the camera matrix including radial distortions. This method is presented in his paper. A handout was distributed in the class with a reference to the paper, code, and some implementation details. This is the standard method for calibrating a pin-hole camera.
3. Five Orthogonal Lines: You can use five orthogonal lines in a scene to calibrate a camera as described in Section 7.7 of the old edition of the textbook. Notice the connection between camera matrix and metric rectification in assignment 2.
4. Three squares: You can use three squares to calibrate a camera as described in Section 7.5 of the old edition of the textbook.