

Github link

<https://github.com/AshleyZG/computational-photography-assignments/tree/master/assignment1>

Parameters

$$f : 1.26074906e + 03$$

$$p_x : 5.07839749e + 02$$

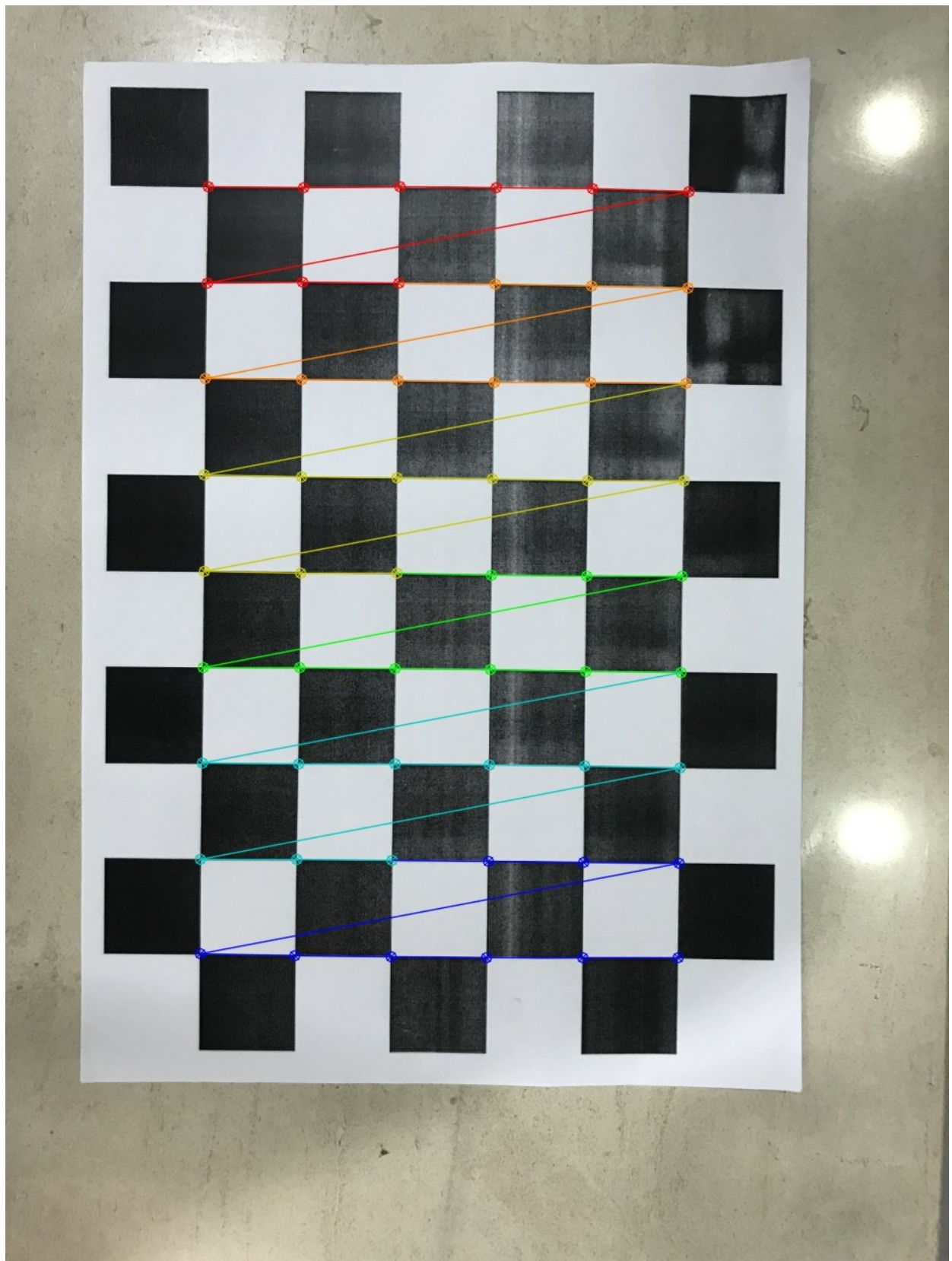
$$p_y : 6.17978259e + 02$$

$$R : \begin{bmatrix} -0.05210208 & -0.07005249 & -3.11566703 \\ 0.18893132 & -0.01043657 & -3.11120492 \\ 0.02821282 & -0.01380909 & 1.19667751 \\ 0.02542261 & -0.00387892 & 0.01218861 \end{bmatrix}$$

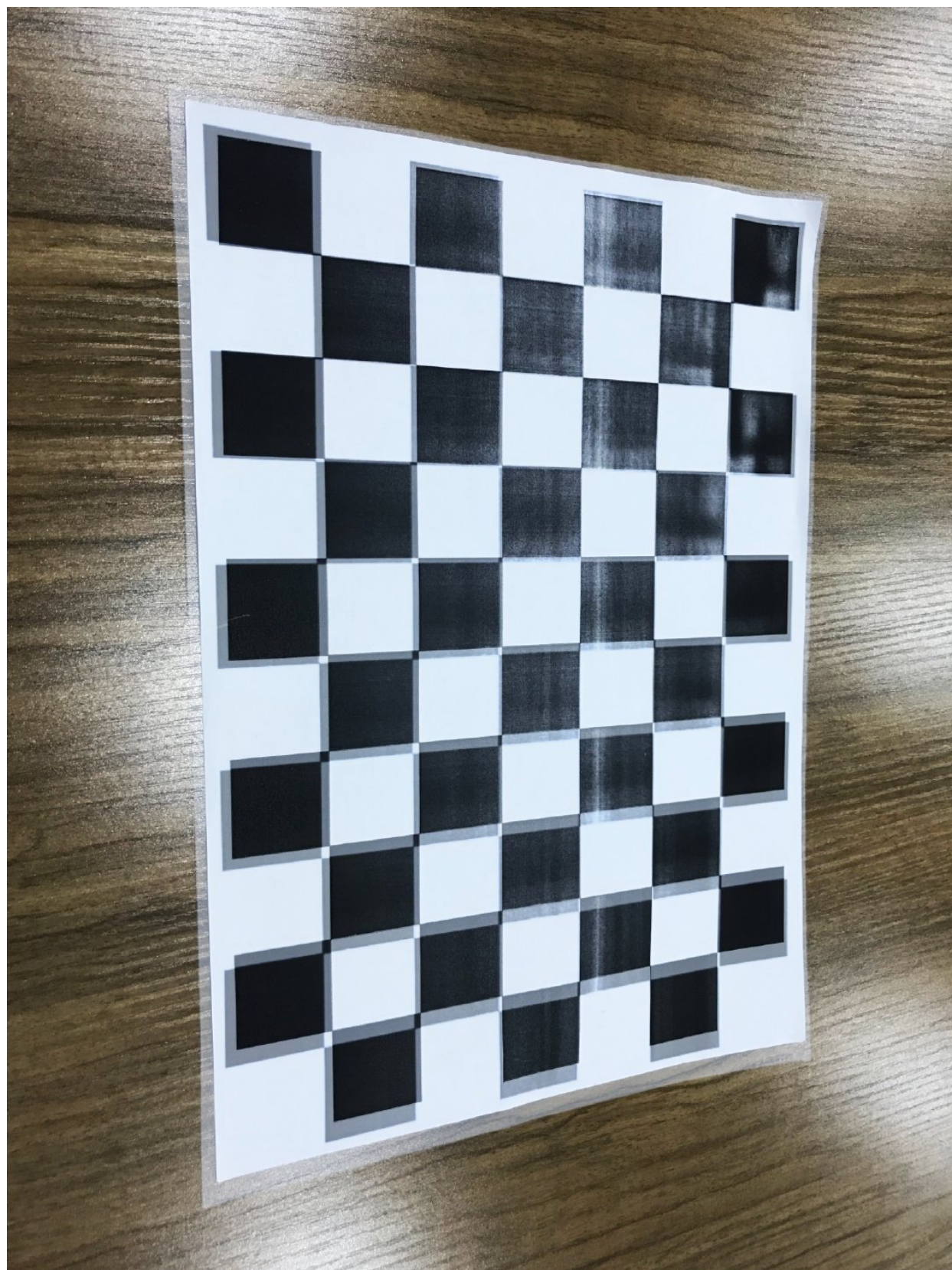
$$t : \begin{bmatrix} 2.01808984 & 4.80771857 & 13.26845788 \\ 2.65847943 & 3.67680621 & 14.25077357 \\ 2.34795759 & -4.07944757 & 17.86614254 \\ -3.08967799 & -4.44202367 & 12.94548773 \end{bmatrix}$$

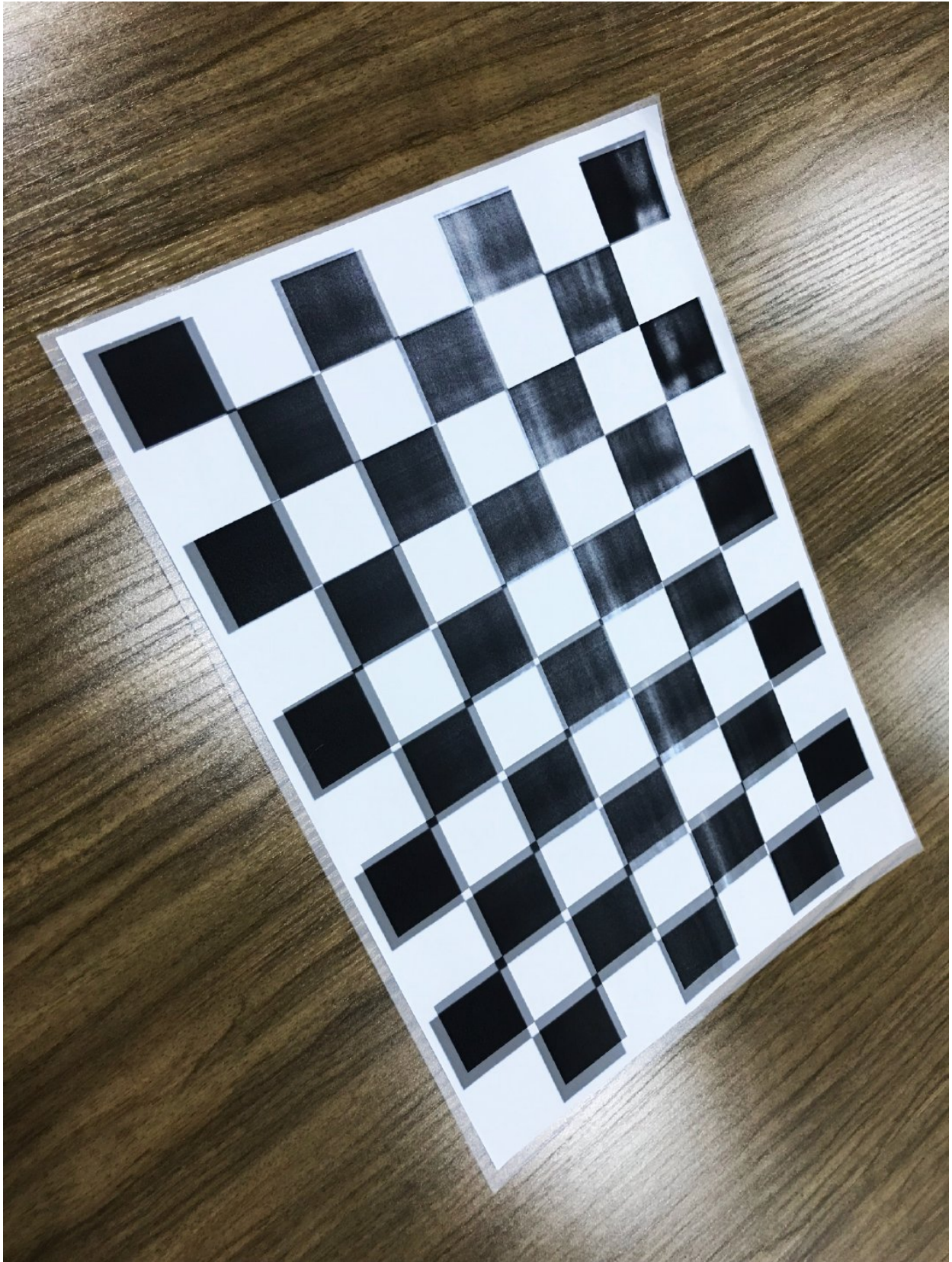
$$k : [3.24945217e - 01 \quad -2.60505766e + 00 \quad 2.98063324e - 03 \quad 2.75388568e - 04 \quad 5.08921651e + 00]$$

Pictures with corners



Undistorted pictures (double exposure)





Bonus

error: 0.0910 - 16 pictures, 0.1444 - 5 pictures

factors: accuracy increases with more pictures used.