Computer Vision

Winter 2023

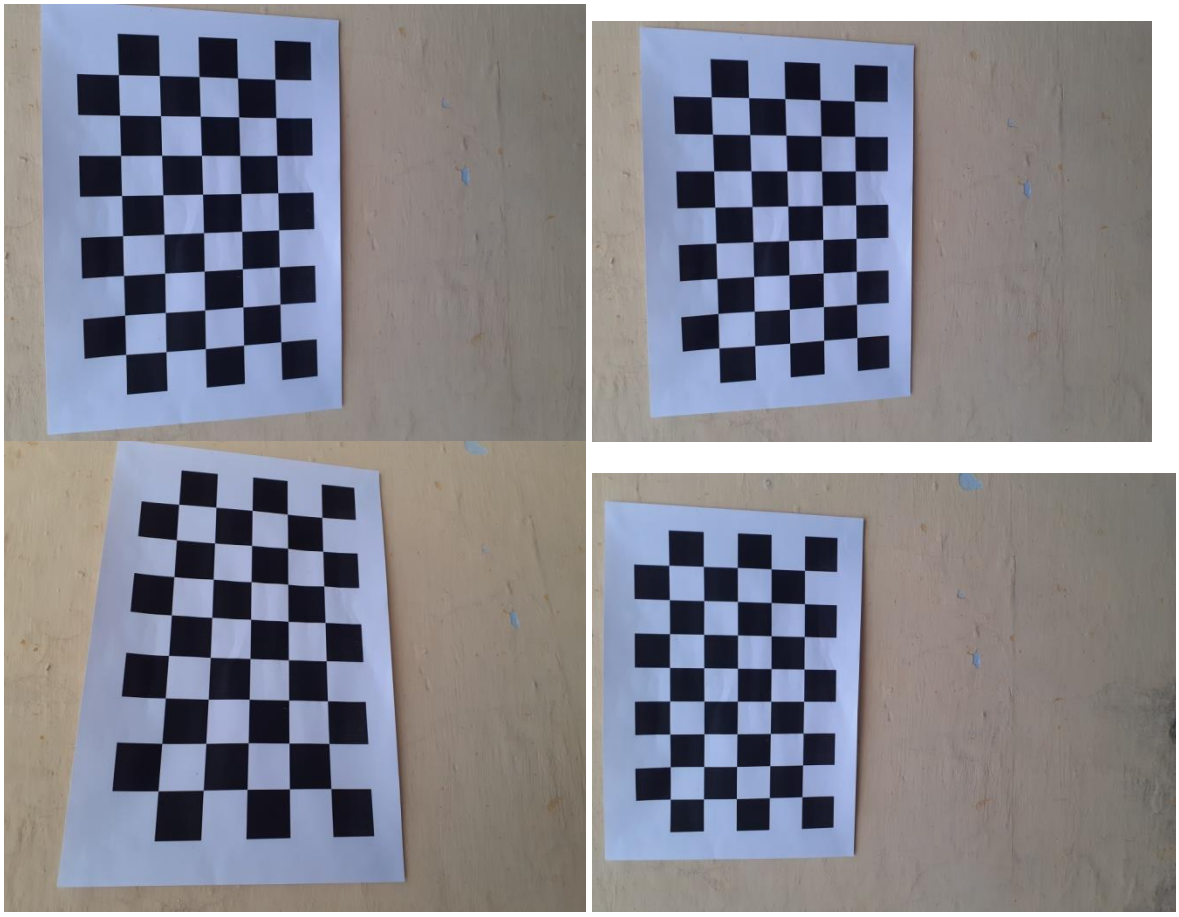
Assignment-2

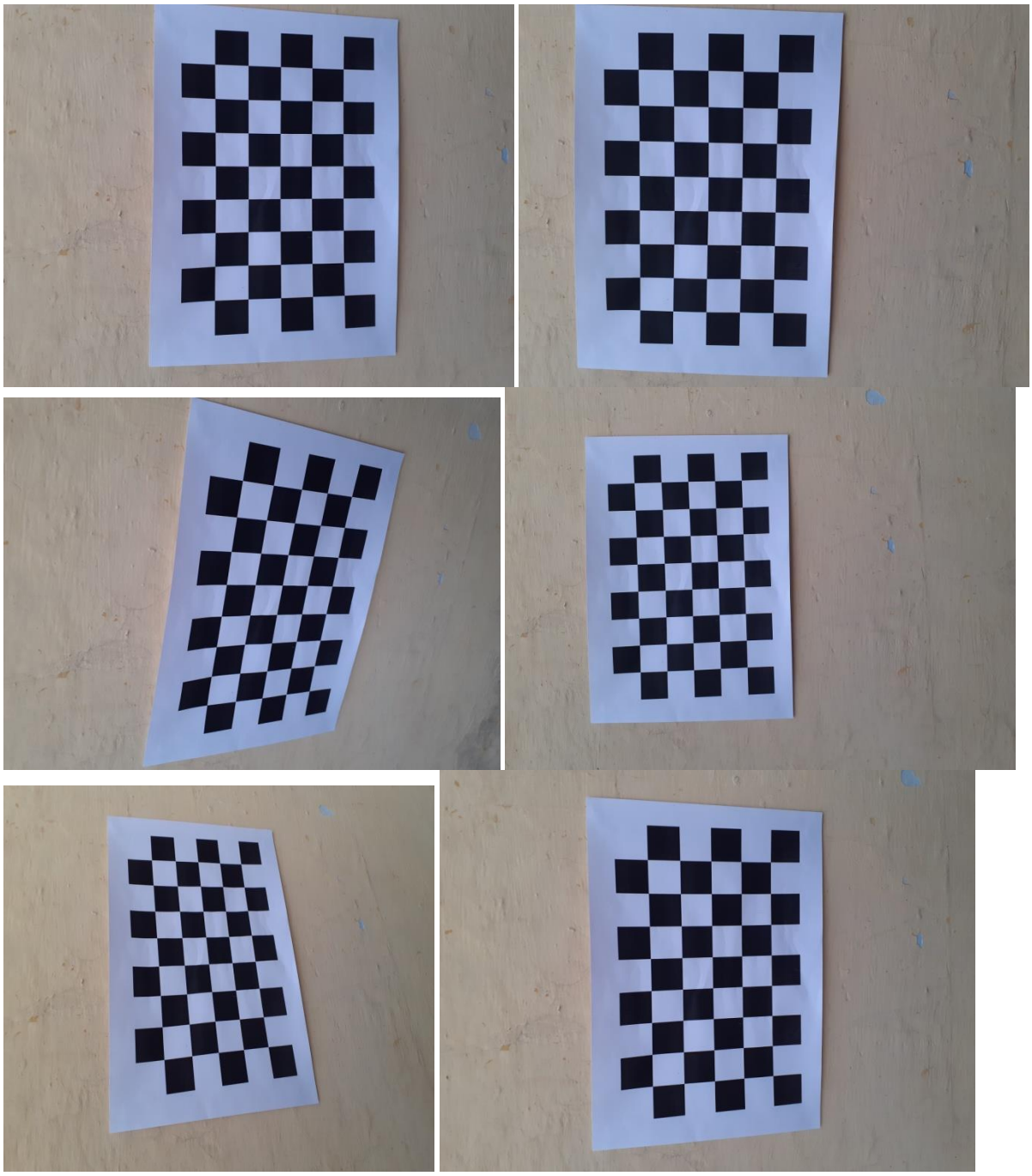
Name**: SagarSuman**

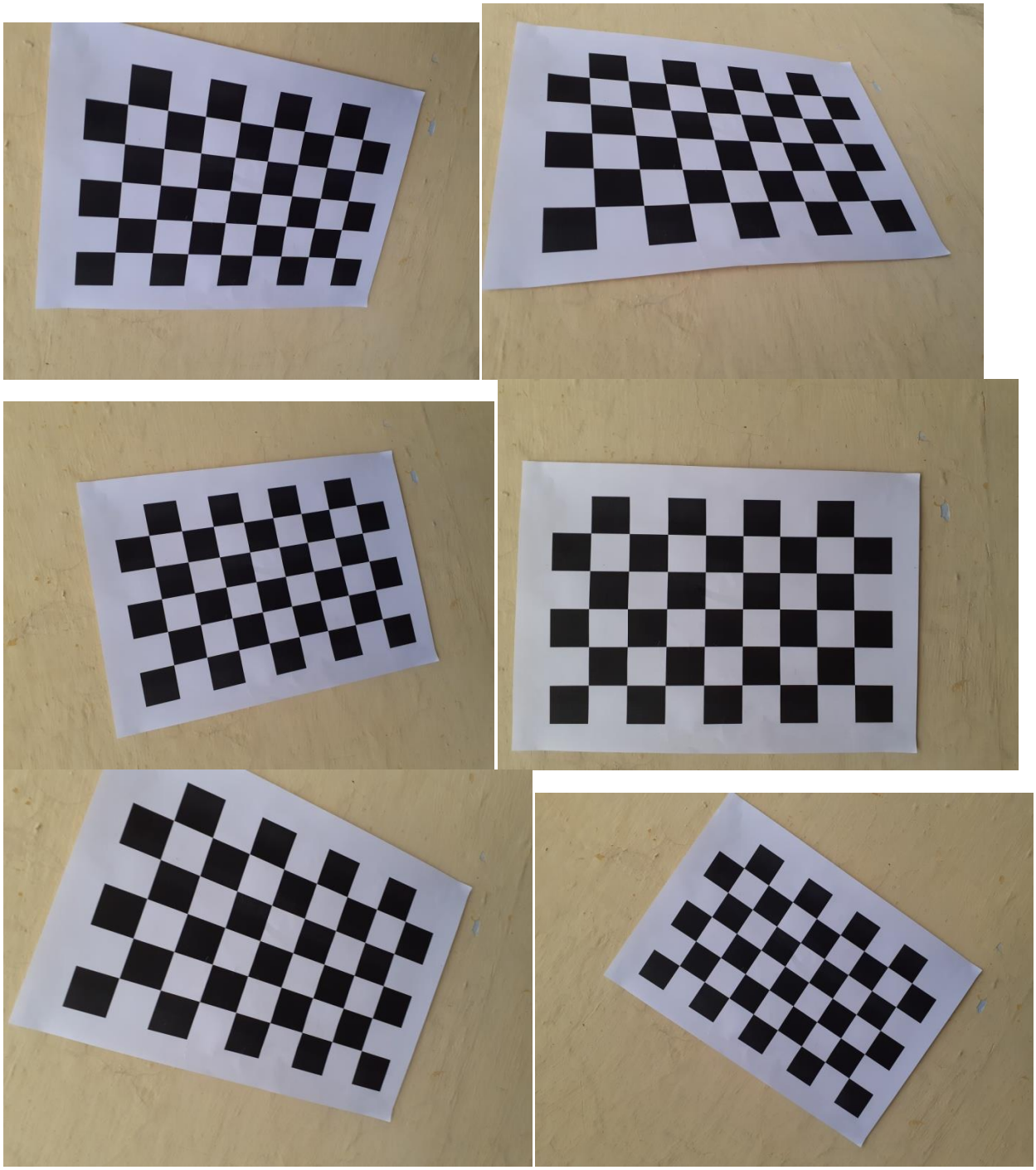
Roll No: **2019197**

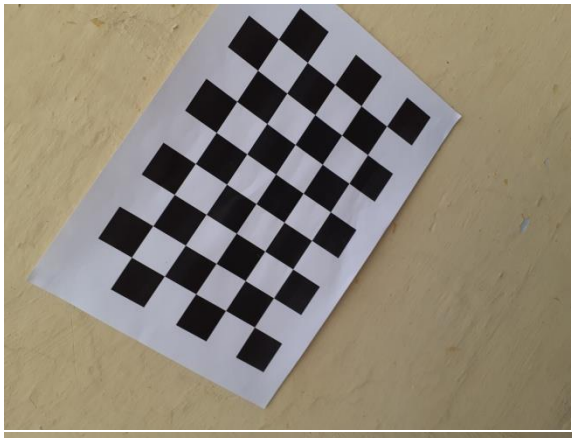
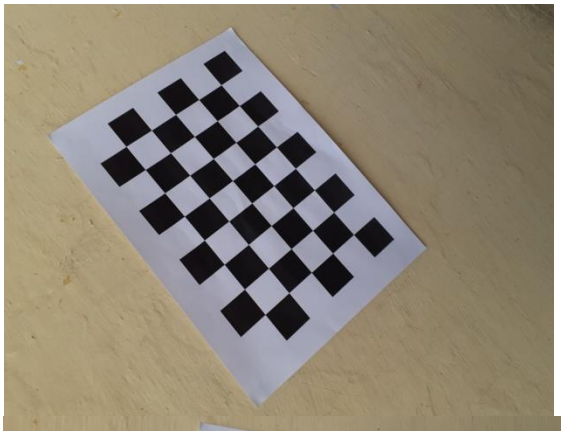
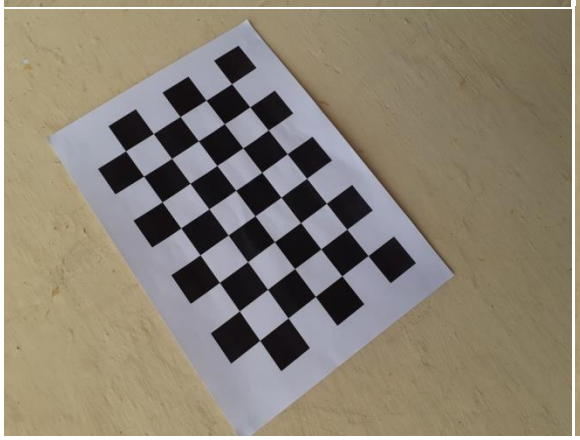
Ans1 :

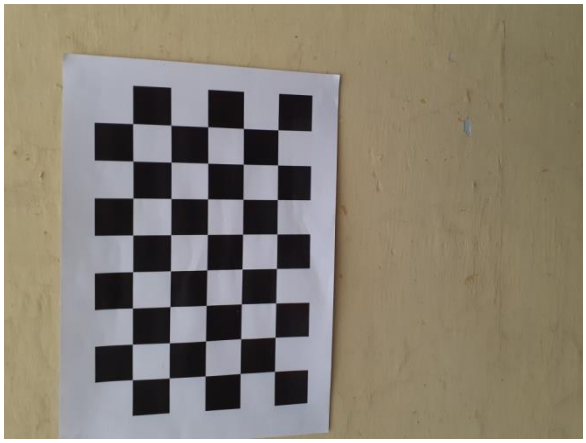
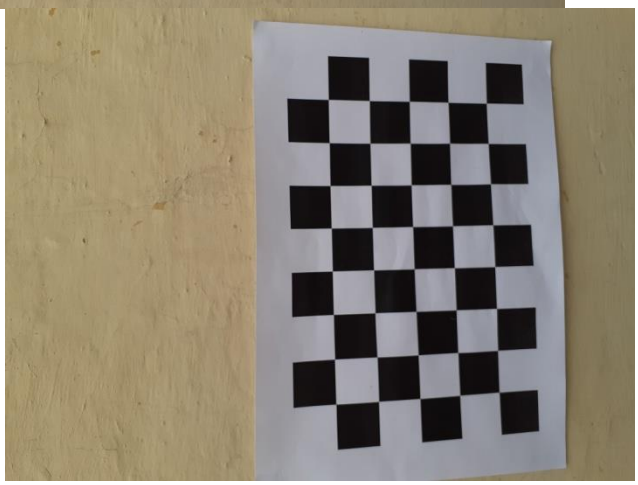
Following are the final set of images captured for this Assignment –

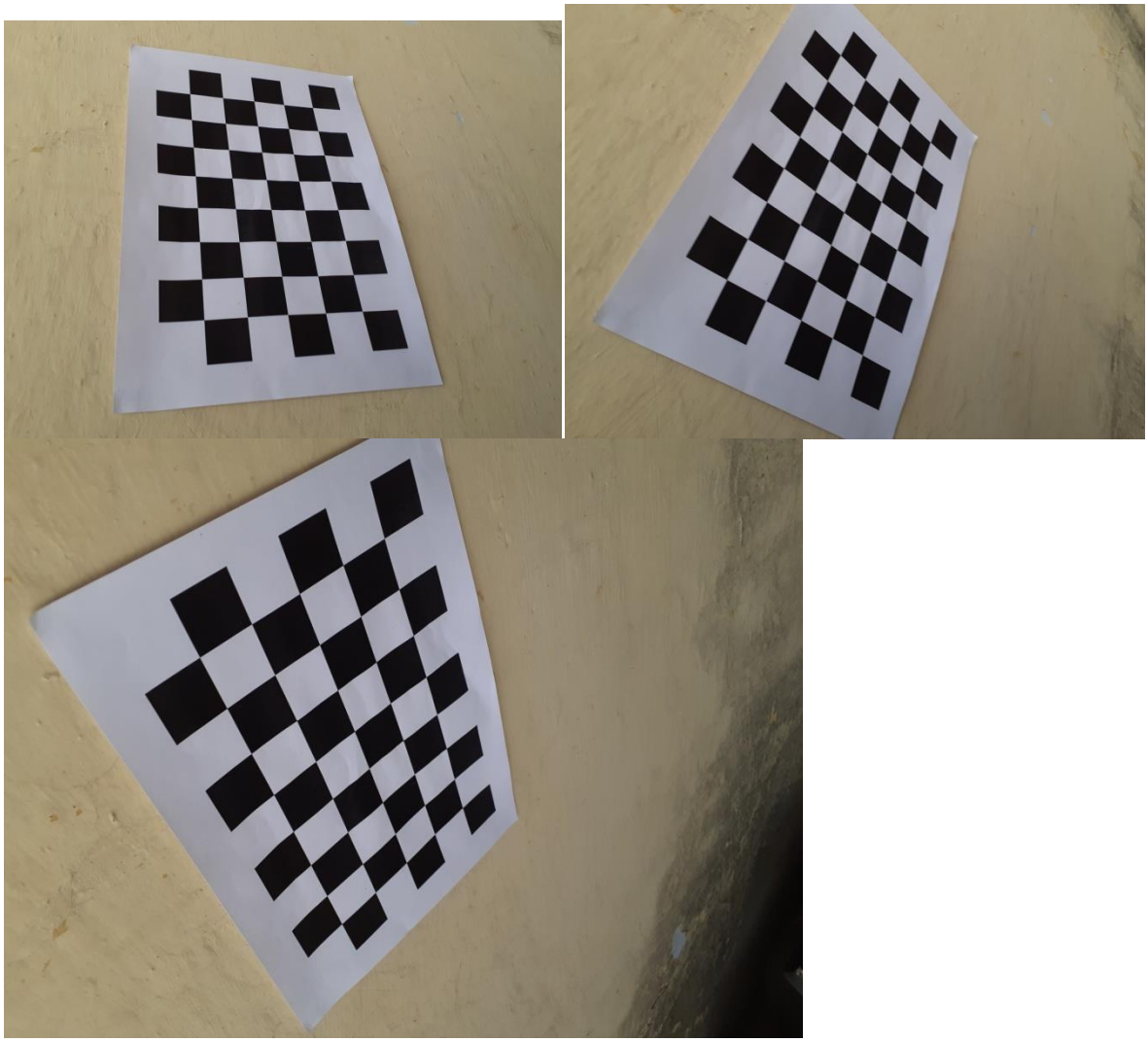




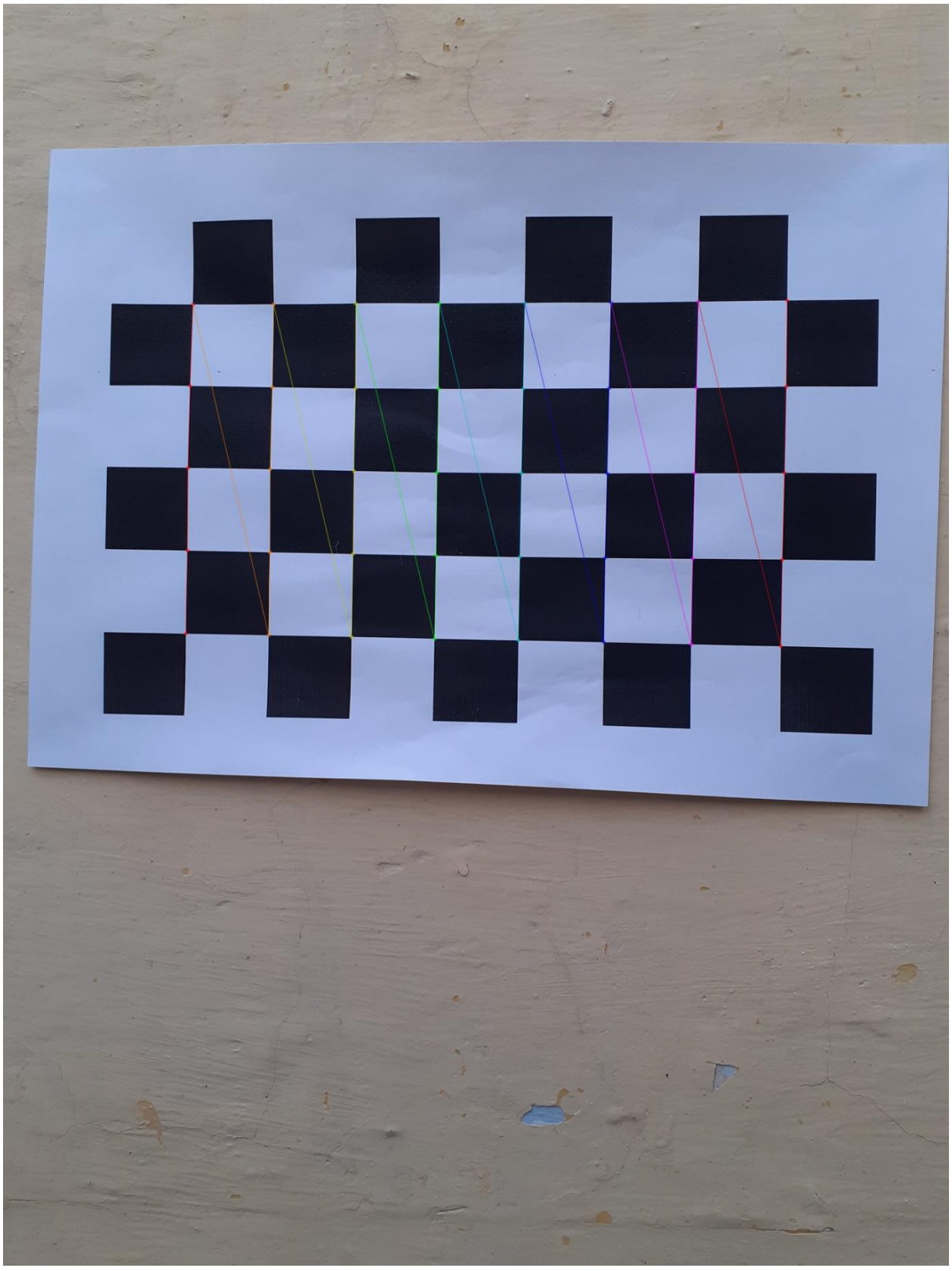


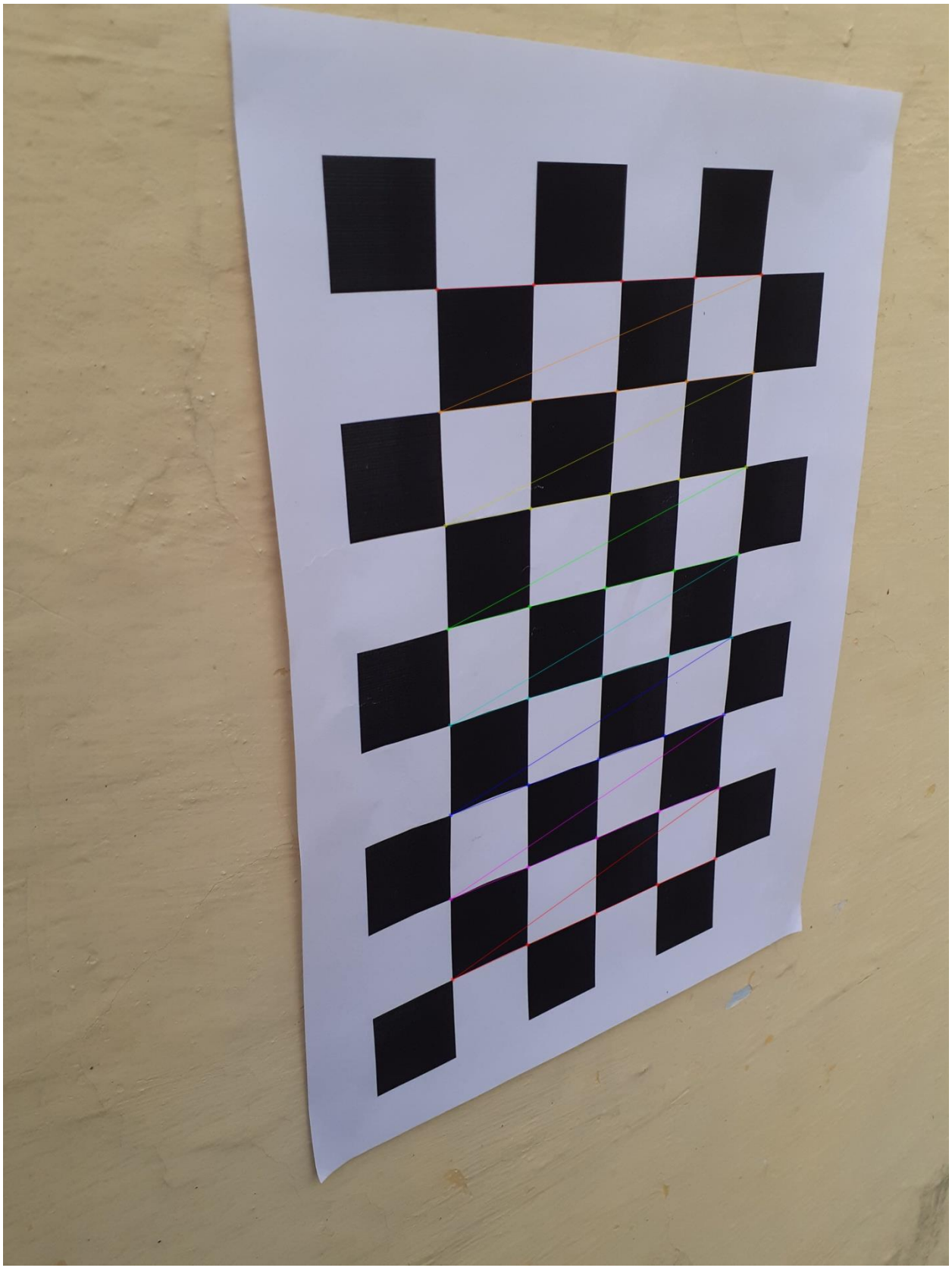






Following Are the results of Detecting Corners





```
camera matrix : [[1.56075621e+04 0.00000000e+00 8.91114166e+02]
 [0.00000000e+00 1.38259293e+04 6.46201093e+02]
 [0.00000000e+00 0.00000000e+00 1.00000000e+00]]
distortion Parameters: [[-2.75988674e+00  2.05721707e+01 -1.06873046e-01  1.14507936e-02
   6.28925397e+01]]
Rotation Vectos: (array([[-0.45698658],
       [ 0.49159875],
       [-1.56177252]]), array([[-0.46730153],
       [ 0.49911445],
       [-1.5580105 ]]), array([[ 0.3603624 ],
       [-0.59471661],
       [-1.4606255 ]]), array([[-0.43449845],
       [ 0.47091631],
       [-1.52704164]]), array([[ 0.26897314],
       [-0.59728166],
       [-1.48367309]]), array([[-0.46599606],
       [ 0.45769307],
       [-1.52896714]]), array([[-0.29024096],
       [ 0.72436885],
       [-1.4404225 ]]), array([[ 0.28375139],
       [-0.49790461],
       [-1.54767544]]), array([[ 0.46453702],
       [-0.5490737 ],
       [-1.55907908]]), array([[-0.50624498],
       [ 0.49777971],
       [-1.57279395]]), array([[0.12197022],
       [0.68947031],
       [0.0779186 ]]), array([[ 0.09910735],
       [-0.81849038],
       [-0.06891314]]), array([[-0.08434501],
       [-0.6068741 ],
       [-0.15410351]]), array([[-0.13349558],
       [-0.59365417],
       [ 0.03427546]]), array([[0.12679926],
       [0.61485399],
       [0.29346604]]), array([[0.139302  ],
       [0.67932776],
       [0.52205411]]), array([[-0.27172972],
       [ 0.62686298],
       [-0.97634991]]), array([[ 0.62196926],
```

```
       [-1.53752639]]), array([[ 0.31233421],
       [-0.59972343],
       [-1.49615636]]), array([[ 0.60074943],
       [-0.5609794 ],
       [-1.52175505]]), array([[ 0.32602344],
       [-0.15065346],
       [-1.04433885]]), array([[-0.37269517],
       [ 0.81733324],
       [-2.01477182]]))
Translation Vectors (array([[-0.60861395],
       [ 4.80430563],
       [48.3646351 ]]), array([[-0.45893886],
       [ 5.09395636],
       [51.26170021]]), array([[-0.22824399],
       [ 5.38214226],
       [41.58017158]]), array([[-0.32144466],
       [ 3.61461978],
       [58.31435001]]), array([[-0.5481032 ],
       [ 7.2561511 ],
       [41.95682113]]), array([[-0.87471869],
       [ 5.1447043 ],
       [47.80073887]]), array([[-0.98866704],
       [ 7.62092392],
       [49.84169553]]), array([[-0.29186854],
       [ 5.78779548],
       [57.12730548]]), array([[ 0.35212726],
       [ 7.33134868],
       [49.04540496]]), array([[-0.55105642],
       [ 7.91356298],
       [51.79595353]]), array([[ 0.60840983],
       [ 0.94727371],
       [41.25991761]]), array([[ 1.37536594],
       [ 1.0017089 ],
       [36.79161772]]), array([[-1.54636820e-02],
       [ 2.52793913e+00],
       [ 4.38962800e+01]]), array([[-6.26755604e-01],
       [ 4.00148129e-02],
       [ 4.01232652e+01]]), array([[ 1.58752846],
       [ 0.88301023],
       [41.70450912]]), array([[ 2.430713  ],
       [ 1.89328668],
       [48.71699838]]), array([[-0.50044691],
       [ 4.34081223],
       [48.92985397]]), array([[ 1.71276774],
```