

Given:

⑦

- 4 projective points/matrices: P_1, P_2, P_3, P_4
- Image points: $(u_1, v_1), (u_2, v_2), (u_3, v_3), (u_4, v_4)$

Init empty matrix A

For each corner in matrix A

$$\text{Row1} = u_i * P[i, 2, :] - P[i, 0, :]$$

$$\text{Row2} = v_i * P[i, 2, :] - P[i, 1, :]$$

Add rows 1+2 to matrix A

Perform SVD on A :

$$U, P, V^+ = \text{SVP}(A)$$

Extract solution:

$$X = U^+ [-1]$$

Convert to cartesian coordinates:

$$X\text{-Cartesian} = X / X[3]$$

Change X-Cartesian $[0:3]$
to (xw, yw, zw)