$$P_1 = \begin{matrix} x_1 \\ y_1 \\ z_1 \end{matrix} \qquad P_i = \begin{matrix} x_i \\ y_i \\ z_i \end{matrix} \qquad i = 1 \ldots 50$$

$$C_a = \begin{matrix} C_{xa} \\ C_{ya} \\ C_{za} \end{matrix} \qquad C_b \quad C_c \quad C_d$$

$$\sum_{l=1}^{3} \alpha_{il} \begin{matrix} C_{xl} \\ C_{yl} \\ C_{zl} \end{matrix} = P_i = \alpha_{i1}\bar{c}_1 + \alpha_{i2}\bar{c}_2 + \alpha_{i3}\tilde{c}_3$$

$$\begin{bmatrix} C_{x1} & C_{x2} & C_{x3} & 0 \\ C_{y1} & C_{y2} & C_{y3} & 0 \\ C_{z1} & C_{z2} & C_{z3} & 0 \\ 1 & 1 & 1 & 1 \end{bmatrix} \begin{bmatrix} \alpha_{11} \\ \alpha_{12} \\ \alpha_{13} \\ \alpha_{14} \end{bmatrix} = \begin{bmatrix} x_1 \\ y_1 \\ z_1 \\ 1 \end{bmatrix}$$

$$C \begin{bmatrix} \alpha_{11} & \alpha_{21} & \\ \alpha_{12} & \alpha_{22} & \cdots \\ \alpha_{13} & \alpha_{23} & \end{bmatrix} = \begin{bmatrix} x_1 & x_2 & \\ y_1 & y_2 & \cdots \\ z_1 & z_2 & \end{bmatrix}$$

$$\forall i, \quad w_i \begin{bmatrix} u_i \\ v_i \\ 1 \end{bmatrix} = \begin{bmatrix} f_u & 0 & u_c \\ 0 & f_v & v_c \\ 0 & 0 & 1 \end{bmatrix} \sum_{j=1}^{4} \alpha_{ij} \begin{bmatrix} x_j^c \\ y_j^c \\ z_j^c \end{bmatrix}.$$

$$w_i \begin{bmatrix} u_i \\ v_i \\ 1 \end{bmatrix} = A \begin{bmatrix} \alpha_{i1}(x_1) + \alpha_{i2}(x_2) + \overset{\text{to } 4}{} \\ \alpha_{i1}(y_1) + \alpha_{i2}(y_2) + \\ \alpha_{i1}(z_1) + \alpha_{i2}(z_2) + \end{bmatrix}$$

$i = 1 \dots 50$

4×3 unknowns

+ 50 w_i