$$q_i (P_{i,31} X_w + P_{i,32} Y_w + P_{i,33} Z_w + P_{i,34}) - (P_{i,1} X_w + P_{i,12} + P_{i,12} W_w + P_{i,14}) = 0$$

$$V_i (P_{i,3} X) - (P_{i,2} X) = 0$$

P_{iJ} = J^{th} row in P_i matrix

$$P_i = \begin{bmatrix} P_{i,1} \\ P_{i,2} \\ P_{i,3} \end{bmatrix}$$

$$A = \begin{bmatrix} u_1 P_{1,3} - P_{1,1} \\ u_1 P_{1,3} - P_{1,2} \\ u_2 P_{23} - P_{21} \\ u_2 P_{23} - P_{22} \\ u_3 P_{33} - P_{31} \\ u_3 P_{33} - P_{32} \\ u_4 P_{43} - P_{41} \\ u_4 P_{43} - P_{42} \end{bmatrix}$$

$A = V p V^T$

$x = V[:, -1]$

$$x_w = \frac{V[:, -1]}{V[-1, -1]}$$

3D Rasterization math