

→ TAREA 3

$$1) \vec{K_c} = OC_{AMERA} - LookAT = \begin{pmatrix} 900 \\ 180 \\ 350 \\ 1 \end{pmatrix} - \begin{pmatrix} 600 \\ 75 \\ 250 \\ 1 \end{pmatrix} = \begin{pmatrix} 300 \\ 105 \\ 100 \\ 0 \end{pmatrix}$$

$$\vec{K_c} = \frac{\vec{K_c}}{\|\vec{K_c}\|} = \begin{pmatrix} 0,9 \\ 0,3151 \\ 0,3001 \\ 0 \end{pmatrix}$$

$$2) \vec{ViewUP} = VUp - OC_{AMERA} = \begin{pmatrix} 600 \\ 175 \\ 250 \\ 1 \end{pmatrix} - \begin{pmatrix} 900 \\ 180 \\ 350 \\ 1 \end{pmatrix} = \begin{pmatrix} -300 \\ -5 \\ -100 \\ 0 \end{pmatrix}$$

$$3) \vec{I_c} = \vec{K_c} \times \vec{ViewUP} = \begin{pmatrix} -30.0095 \\ -0.03 \\ 90.03 \\ 0 \end{pmatrix}, \quad \vec{i_c} = \frac{\vec{I_c}}{\|\vec{I_c}\|} = \begin{pmatrix} -0,3162 \\ -0,0003 \\ 0,9487 \\ 0 \end{pmatrix}$$

$$4) \vec{j_c} = \vec{K_c} \times \vec{i_c} = \begin{pmatrix} 0,2990 \\ -0,9487 \\ 0,0993 \end{pmatrix}$$

$$5) M_{cw} = \begin{bmatrix} -0,3162 & 0,2990 & 0,9 & 900 \\ -0,0003 & -0,9487 & 0,3151 & 180 \\ 0,9487 & 0,0993 & 0,3001 & 350 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$M_{wc} = \begin{bmatrix} -0,3162 & -0,0003 & 0,9487 & -47,411 \\ 0,2990 & -0,9487 & 0,0993 & -133,089 \\ 0,9 & 0,3151 & 0,3001 & -971,753 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$6) T^w = M_{wc} * T^F = \begin{bmatrix} 106.38 & -12.34 & -43.40 & 75.32 & 106.38 & -12.34 & -43.40 & 75.32 \\ 4.53 & 9.92 & -58.67 & -64.06 & 1.69 & 7.07 & -61.52 & -66.31 \\ -328.77 & -312.68 & -519.30 & -535.39 & -327.83 & -311.71 & -518.35 & -534.44 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

$$P_1^w = M_{wc} * P_1^F = \begin{bmatrix} -39.61 & -42.58 & -43.29 & -40.32 & -39.63 & -42.60 & -43.31 & -40.34 \\ 11.05 & 11.18 & 9.62 & 9.49 & -57.35 & -57.11 & -58.67 & -58.81 \\ -537.69 & -537.23 & -541.99 & -542.3941 & -515.01 & -514.60 & -519.20 & -519.70 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

$$P_2^w = M_{wc} * P_2^F = \begin{bmatrix} 76.20 & 73.23 & 72.53 & 75.49 & 76.18 & 73.21 & 72.50 & 75.47 \\ 5.79 & 5.93 & 4.77 & 4.24 & -62.50 & -62.37 & -63.93 & -64.06 \\ -553.38 & -551.98 & -557.67 & -558.08 & -530.63 & -530.23 & -534.99 & -535.39 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

$$P_3^w = M_{wc} * P_3^F = \begin{bmatrix} -9.20 & -12.17 & -12.87 & -9.90 & -9.22 & -12.13 & -12.30 & -9.97 \\ 78.09 & 78.23 & 76.67 & 76.53 & 9.79 & 9.92 & 8.36 & 8.23 \\ -335.77 & -335.37 & -340.07 & -340.47 & -313.09 & -312.68 & -316.78 & -317.78 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

$$P_4^w = M_{wc} * P_4^F = \begin{bmatrix} 106.61 & 103.64 & 103.94 & 105.91 & 106.59 & 103.62 & 102.92 & 105.98 \\ 72.84 & 72.97 & 71.41 & 71.28 & 4.53 & 4.67 & 3.11 & 2.57 \\ -351.06 & -351.06 & -355.75 & -356.15 & -328.77 & -328.37 & -333.07 & -333.47 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

$$P_{Ponte}^w = M_{wc} * P_{Ponte}^F = \begin{bmatrix} 31.55 \\ -290.80 \\ -336.44 \\ 1 \end{bmatrix}$$