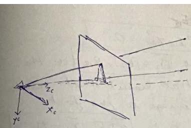


Pg 27 of cs231a, Chapter 9. See MR 18, MR 17 folder

$\lambda_1 \vec{p}_1 = K[I \ 0]\vec{X} \longrightarrow (1).$ normalised coords.

$K^{-1}\lambda_1 p_1 = X$ or $\lambda_1 K^{-1} p_1 = X \longrightarrow (2)$

or ~~$x_1$~~ $\lambda_1 \vec{x}_1 = \vec{X} \longrightarrow$, where $x_1 = K^{-1} p_1$.

$\lambda_2 \vec{p_2} = K[R_{21} \ t_{21}]\vec{X} \longrightarrow (2).$

$K^{-1}\lambda_2 \vec{p_2} = [R_{21} \ t_{21}]\vec{X} \longrightarrow (3).$

or $\lambda_2 \vec{x_2} = [R \ t]\vec{X} \longrightarrow (4)$ (drop suffices).

↳ normalized coord

Note that $O_1 O_2' P$ form a triangle.

~~Then $\vec{O_1 P}$. $t$~~

Then $\vec{OP} . (\vec{OO'} \times \vec{O'P}) = 0 \longrightarrow (5)$

or $\lambda_1 \vec{x_1} (\vec{t}_{12} \times R_{12} \lambda_2 \vec{x_2}) = 0 \longrightarrow (6)$

since $O'P = R_{12} \lambda_2 \vec{x_2}$ The vector $\vec{x_2}$ (normalized coords). represented in the 1st camera.

$\lambda_1 \lambda_2 \vec{x_1} (\vec{t_{12}} \times R_{12} \vec{x_2}) = 0 \longrightarrow (7).$

or $\vec{x_1} [t_{12}]_\times R_{12} \vec{x_2} = 0$ ~~$x$~~ $\longrightarrow (8)$

M