

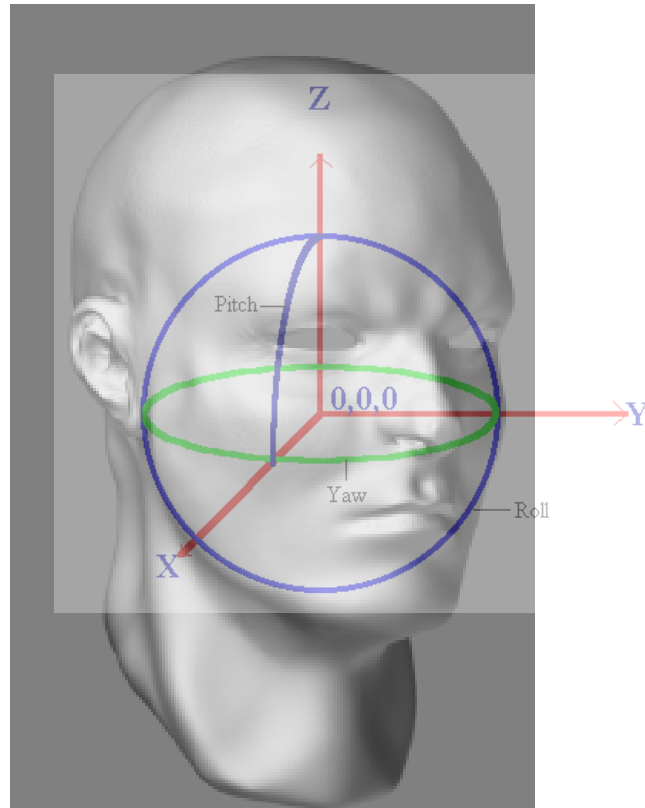
1.Prerequisites:

- opencv 4.5.5
- ITK (4.13.2-dfsg1-8): `sudo apt-get install libinsighttoolkit4-dev`

2.Run

- modify cmakeList.txt (find package: opencv & ITK; `target_link_libraries`)
- check main.cpp

Coordinate system



degree: -180 ~ 180

$$R_z(z) = \begin{pmatrix} \cos(z) & -\sin(z) & 0 & 0 \\ \sin(z) & \cos(z) & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix},$$

$$R_x(x) = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & \cos(x) & -\sin(x) & 0 \\ 0 & \sin(x) & \cos(x) & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix},$$

$$R_y(y) = \begin{pmatrix} \cos(y) & 0 & \sin(y) & 0 \\ 0 & 1 & 0 & 0 \\ -\sin(y) & 0 & \cos(y) & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix},$$

~~$$Rot(x, y, z) = R_y(y)R_x(x)R_z(z)$$~~

$$R = R_z \cdot R_y \cdot R_x$$