

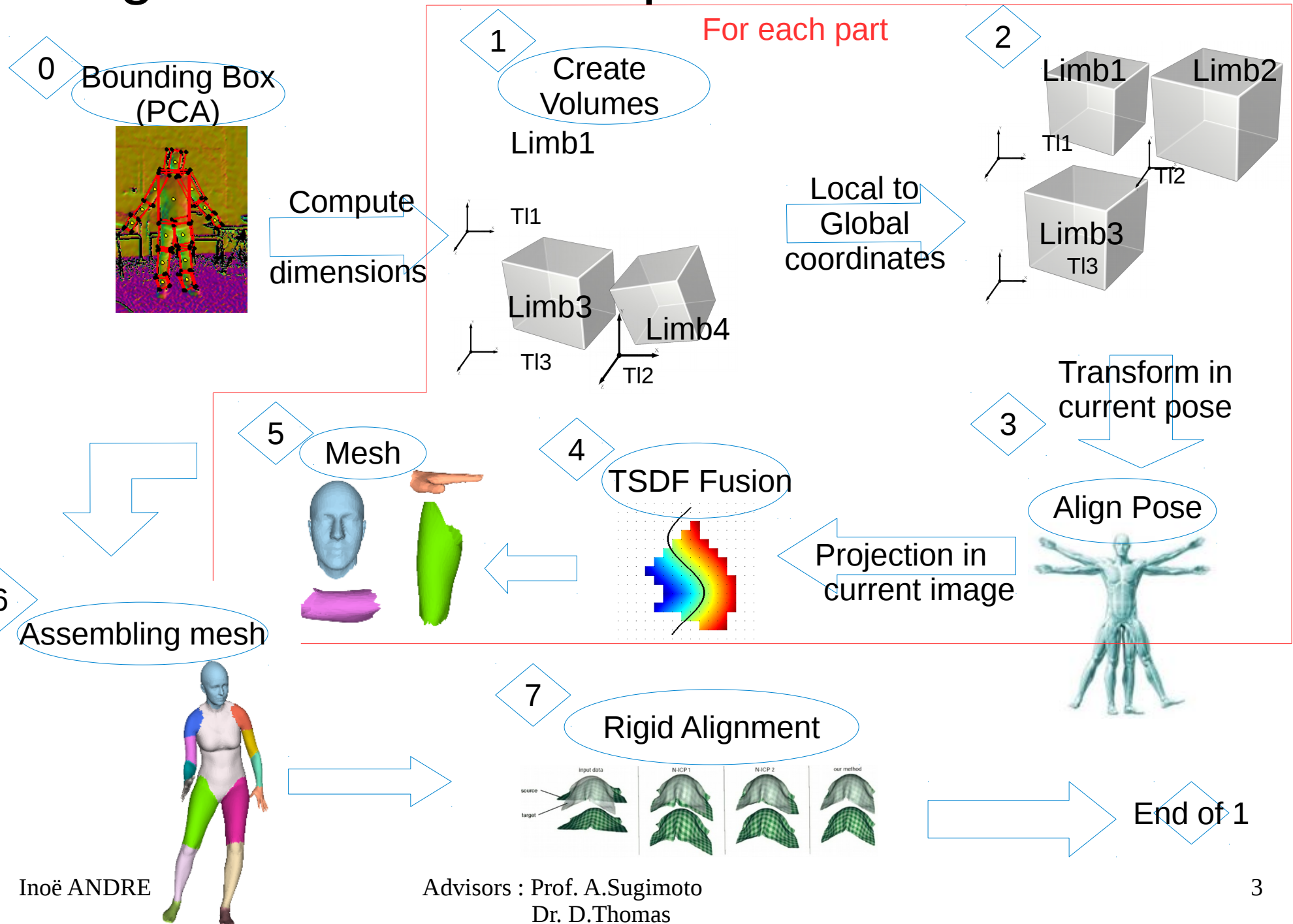
Dynamic fusion

Internship Week 25
Segmented Fusion
9th August 2017

Last meeting

- Previously
 - Skeleton Tracking
 - Reports
- Plan for today's meeting:
 - Clean and comment Code
 - Skeleton Tracking
 -

Segmented Fusion Pipeline



Skeleton tracking

Initialization Image 80

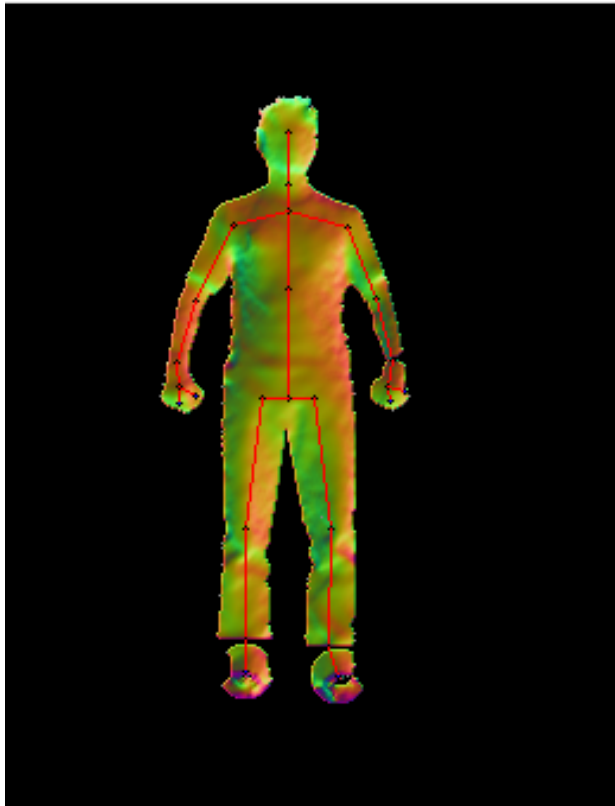


Image 10-30 depth map

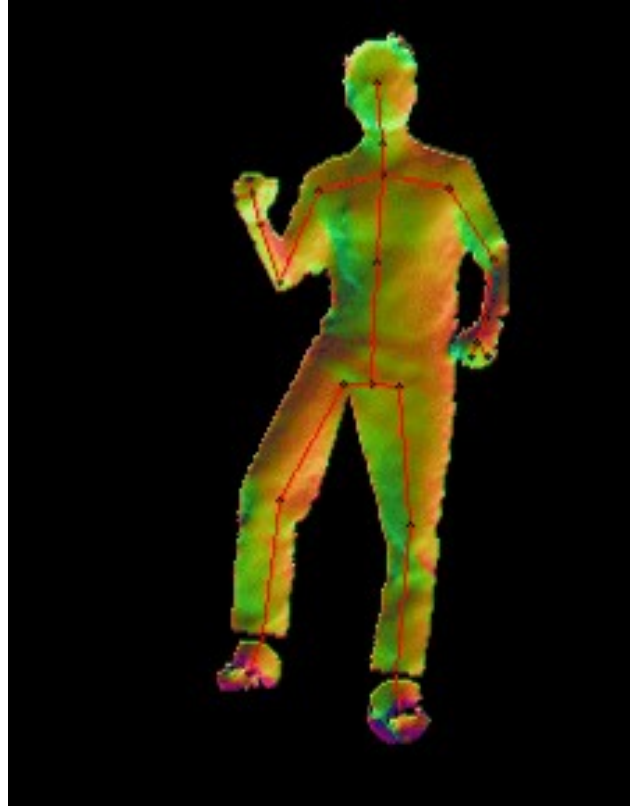
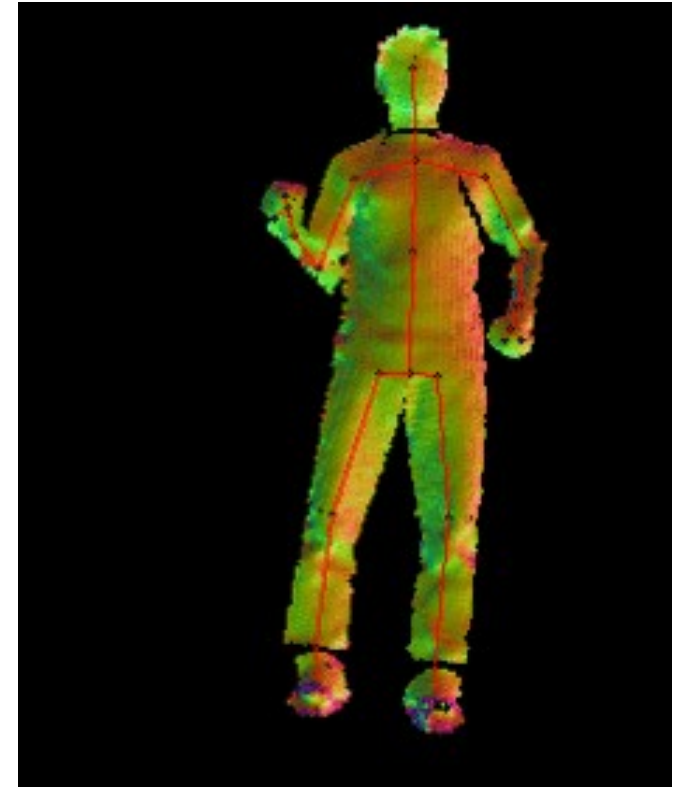


Image 10-30 stitched body

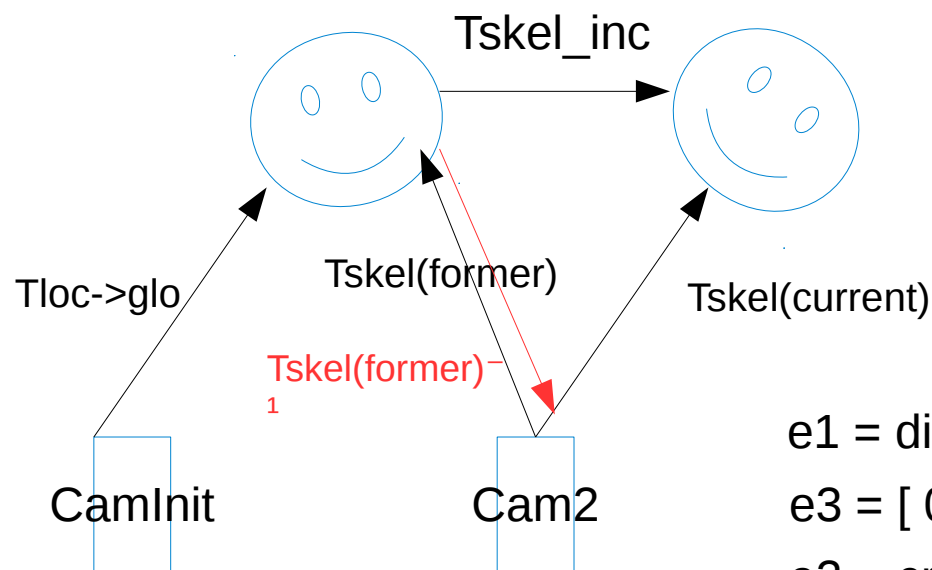


Skeleton tracking

Head image 1

Head image 2

$$\text{Tskel_inc} = \text{Tskel}(\text{current}) * \text{Tskel}(\text{former})^{-1}$$



$$\text{Tskel} : \begin{array}{cccc} & e1 & e2 & e3 & \text{Ctr} \\ \begin{bmatrix} e11 & e21 & e31 & c1 \\ e12 & e22 & e32 & c2 \\ e13 & e23 & e33 & c3 \\ 0. & 0. & 0. & 1. \end{bmatrix} \end{array}$$

$e1$ = difference of perspective transform of two junctions

$e3 = [0.0, 0.0, \text{depth of center of cloud of point}]$

$e2 = \text{cross}(e1, e3)$

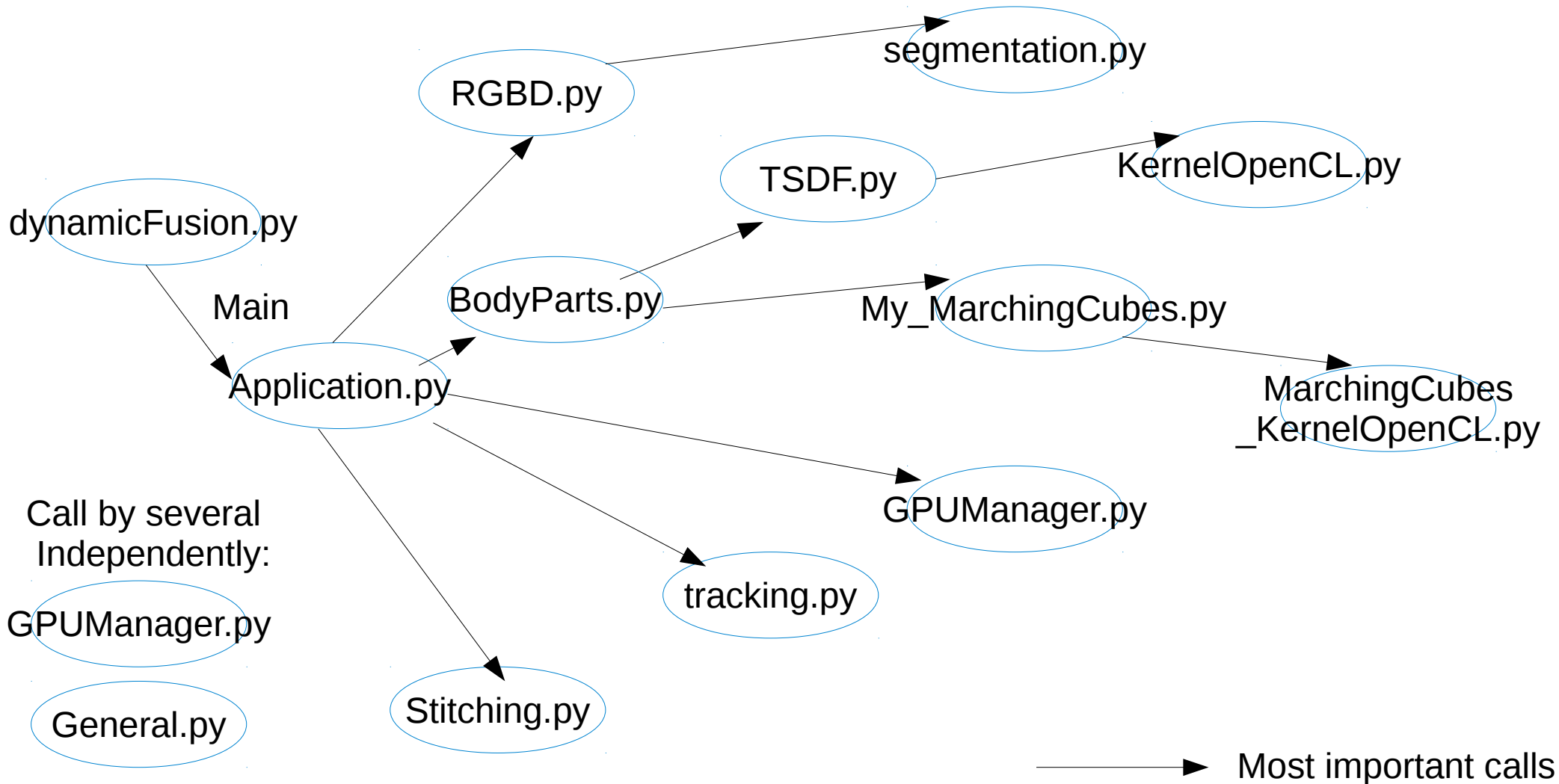
~~$e13 = \text{depth of vertex at junction 1}$~~

~~$e23 = \text{depth of vertex at junction 2}$~~

$c1, c2 = \text{perspective transform of mean of junctions}$

$c3 = e33 = e13 = e23$

Code : Structure



Code : potential bug

- Display :
 - Subsampling display (when 'c' is pressed)
 - Event management do not work for skeleton and colors segmentation.
- Dataset : some image wrong skeleton in String4b.mat? Or empty image in NewData. Need to check image before using it.
- Most function do not have special case management => can create NaN.

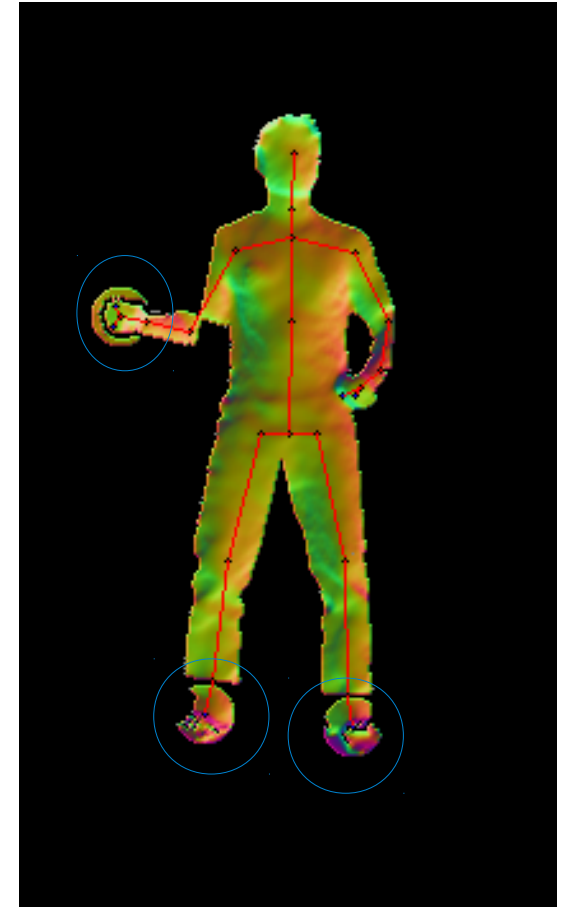
Code : potential bug

Faces sides in mesh
black and white



Segmentation =>
improve it for hands
and feet (sphere =
hard value)

Idea :
Process with time.
Use color image.



Code

- Documentation doxygen
 - Documentation generator on HTML local server
- For skeleton tracking
 - SkeletonTracking.py

Q&A

- Show the code?
- Feedback