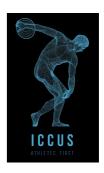


#### 1st Nov 2018 - 30th Jul 2019

## R&D for Youdome pro sports and health care software

## For avatars 3D reconstruction (body scanning) and measurement



### Achieved tasks :

- Point set repositioning, cleaning, and processing (grid simplification, outliers removal)
- 3D reconstruction (screened Poisson) / mesh generation integration
- Mesh processing: holes and boundary detection, smoothing, altitude thresholding, hole filling
- Mesh subselection and substripe selection
- Isotropic mesh slicing algorithm
- Convex hull option for slices girth
- Limb girths and diameter curves
- Avatar slicing video
- Avatar advanced segmentation and labelling
- Landmarks level / altitude detection
- Avatar stick skeleton
- Vectorized / oriented slicing
- Lumbar profile extraction and bending values estimation
- Input parameters estimation and adjustment
- Output data formated writing
- Output data automatic statistics generation and registration for each athlete in its folder
- Output main resulting images registration for each athlete in its acquistion folder
- Automatic file name segmentation and file management
- Fully automatic mode, sequential mode, test mode
- Data file format conversion (.xyz, .off, .ply, .obj)
- Parallel processing
- GPU tests
- Processes monitoring
- Code user manual and programer documentation
- Youdome visual slogan and icon

# Programming languages, libraries, versioning tools and OS:

- Matlab
- Meshlab & Meshlab server
- DOS
- Doxygen

# • Collaborations and partnerships

- Christian Barat, I3S
- Clément Lavallard, Iccus
- Benjamin Guilleray, dynamic audio
- Maks Ovsjanikov, LIX Polytechnique
- Bastien Blomme, IT systems