Final report for 2023 FOSTER-xR project

YUQIAO REN

4TH YEAR PHD

SCHOOL OF BIOSYSTEMS AND FOOD ENGINEERING, UNIVERSITY COLLEGE DUBLIN, IRELAND

ADIV RESEARCH INSTITUTION, CLERMONT-FERRAND, FRANCE

ADIV

Technology Platform

Team Offices

Analytical laboratories

P2+ Laboratories and Workshop

The ADIV is an Agro-Industrial Technical Institute (ITAI) and Contract Research Company (SRC) based in Clermont-Ferrand, deploying tailor-made services of applied R&D, Audit, Consulting and Training

Field of activity

- The downstream of the meat sectors

- Cattle, sheep, pigs and poultry etc.

- Slaughters

- Cutting

- Transformation

- Suppliers to meat industries

- Kitchens, caterers & canneries

- Food proteins innovation

- Etc.

The scope of the work:
Design a VR software for slaughtering training

1. Learning use the 3D laser scanner

2. The post-processing method for a 3D mesh model

3. Obtain the 3D models for different meat parts

4. Assemble each parts in unity software

Simulation of the VR training software

Methodology

Materials:
- A Beef Shank
- EinScan HX 3D scanner

Data process Software:
- EXScan (v1.3.0.3)
- Unity (v2022.3.5f1)
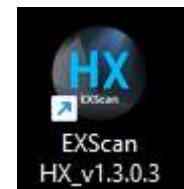
Lab Infrastructure and equipment:
- -20 degree C frozen room
- 4 degree C cutting room

EXScan HX_v1.3.0.3

Unity

Scan me!

Methodology

Scan beef shank ➡ Segmentation ➡ Assemble ➡ Fixed and frozen

Methodology
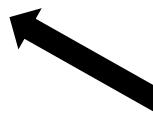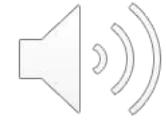
Methodology

- Scanning
- Background remove
- Create point clouds
- Generate the mesh model
- Mesh model post-process
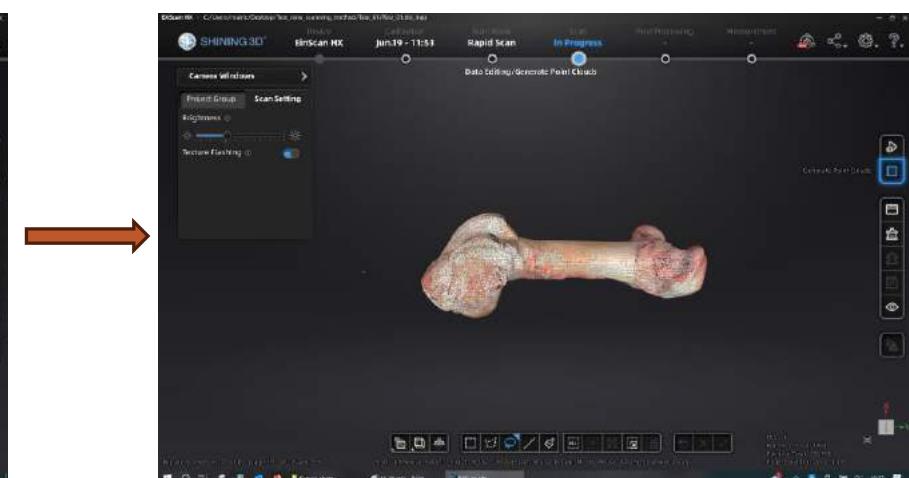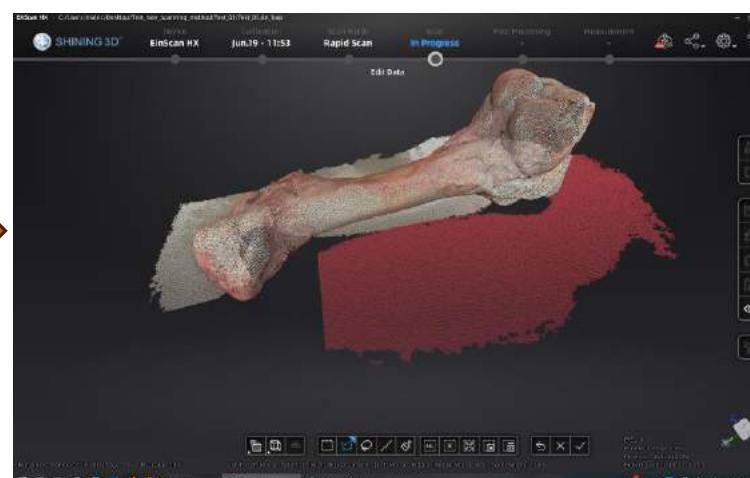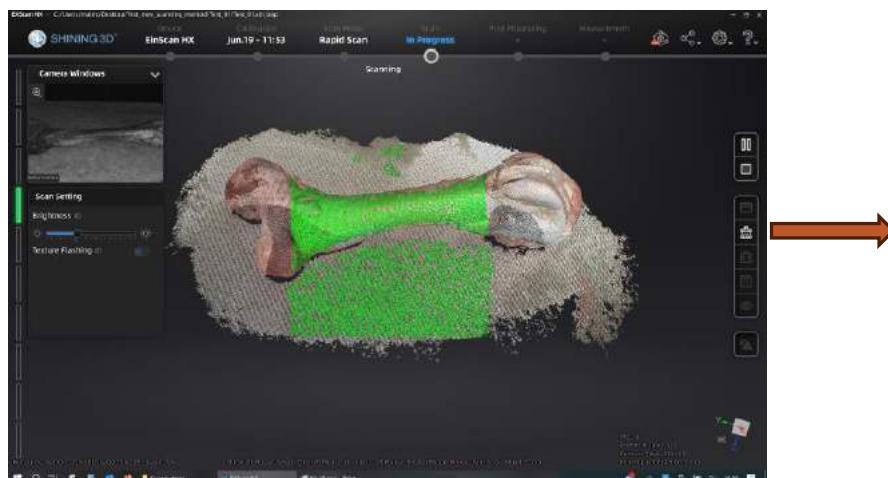
Results and Discussion
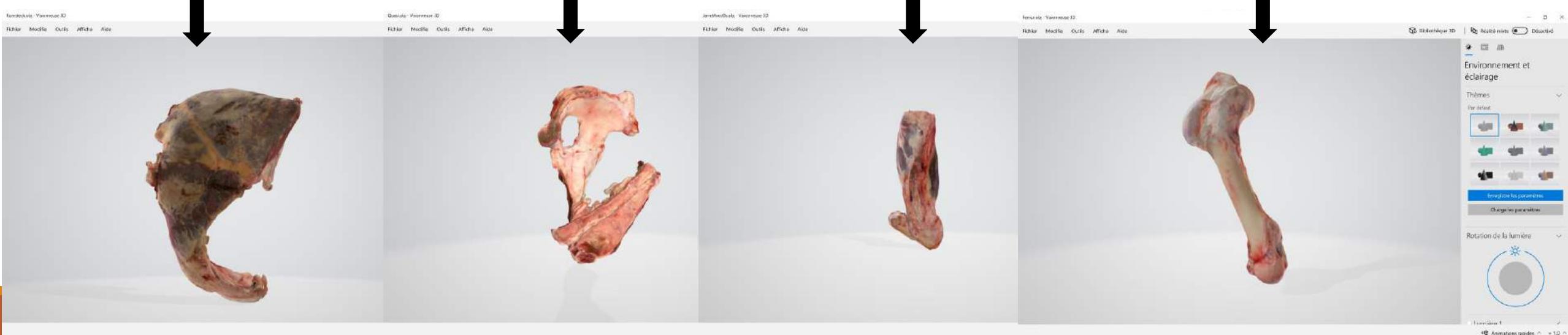
Results and Discussion
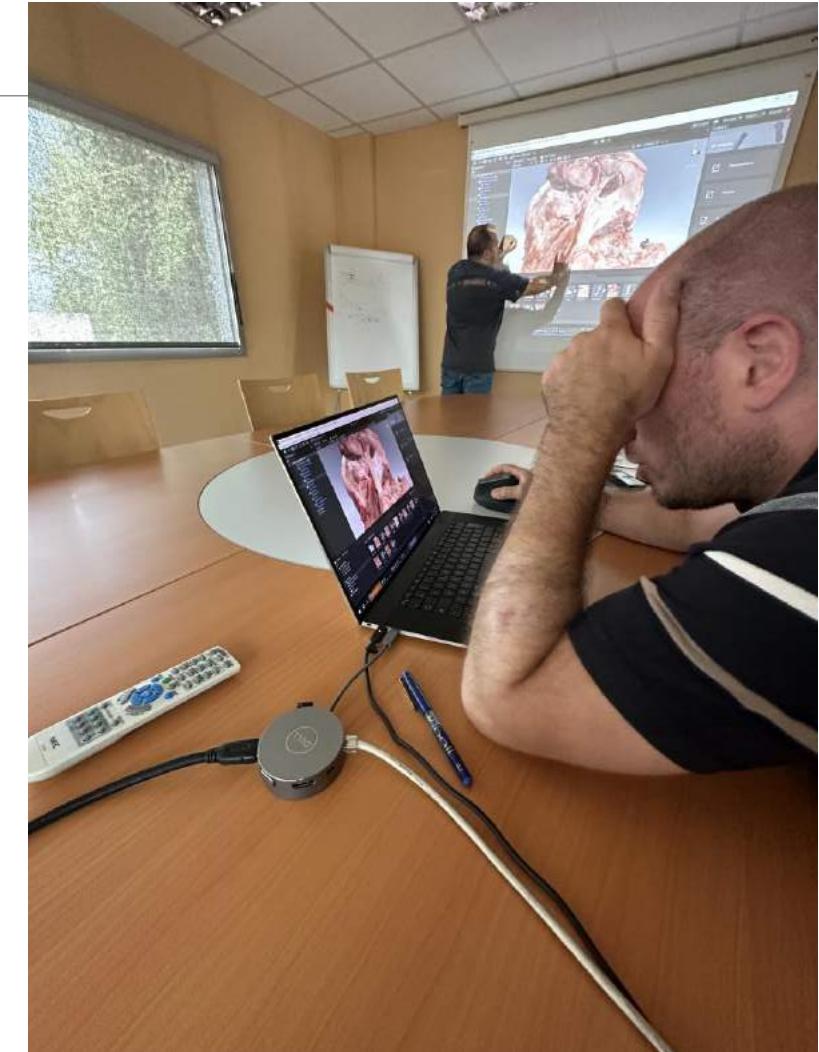
The digital models are assembled with the help of slaughter experts

Results and Discussion
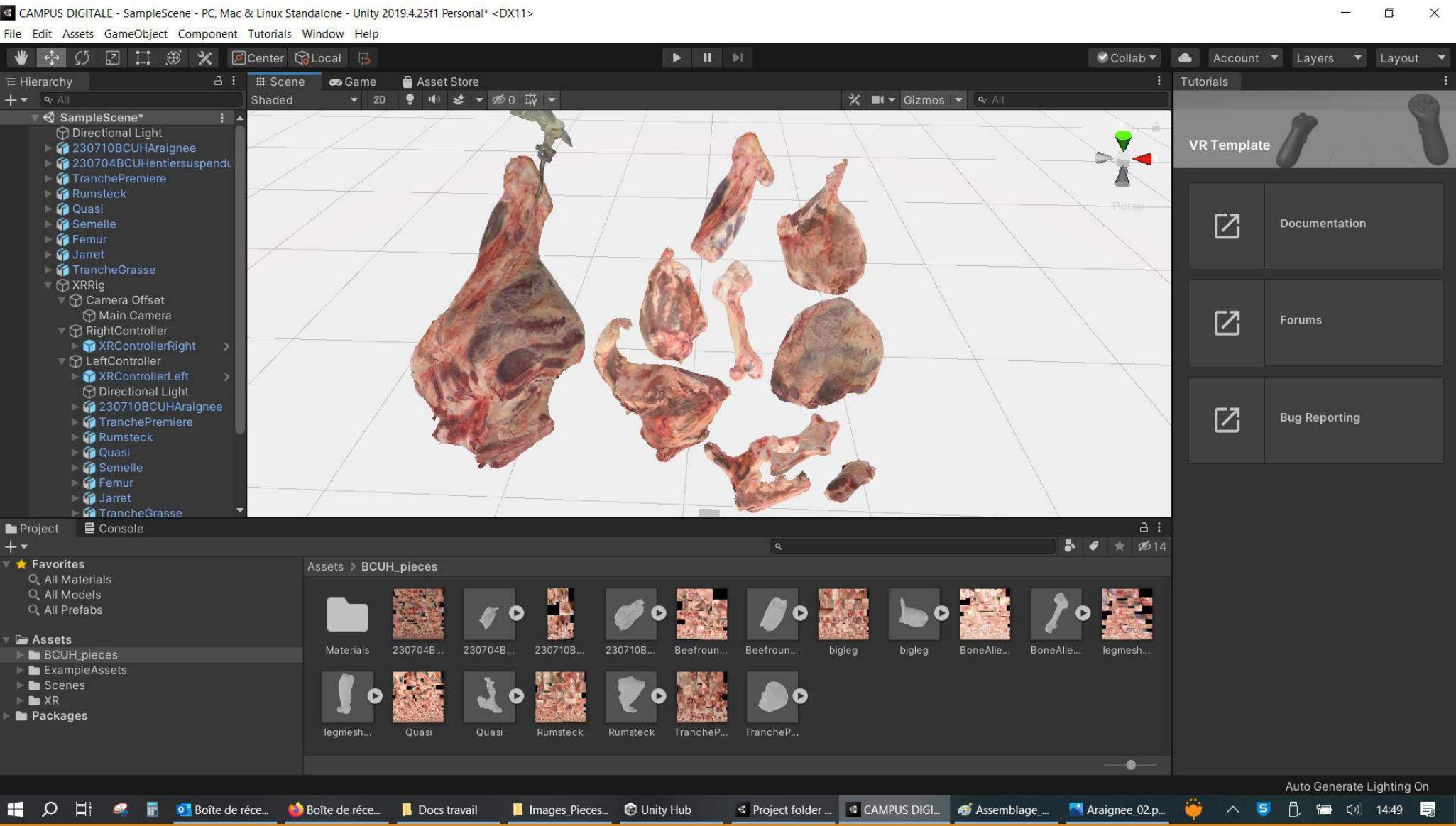
Thanks for your listening