

# Software Engineering Project Weekly Report

## **3D-KORN**

University of Bourgogne

|                         |                           |                          |
|-------------------------|---------------------------|--------------------------|
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| Roberto Paoella         | Umamaheswaran Raman Kumar | Savinien Bonheur         |
| Albert Clerigues Garcia | Daniel Gonzalez Adell     | Nayee Muddin Khan Dousai |
|                         | Pamir Ghimire             | Di Meng                  |

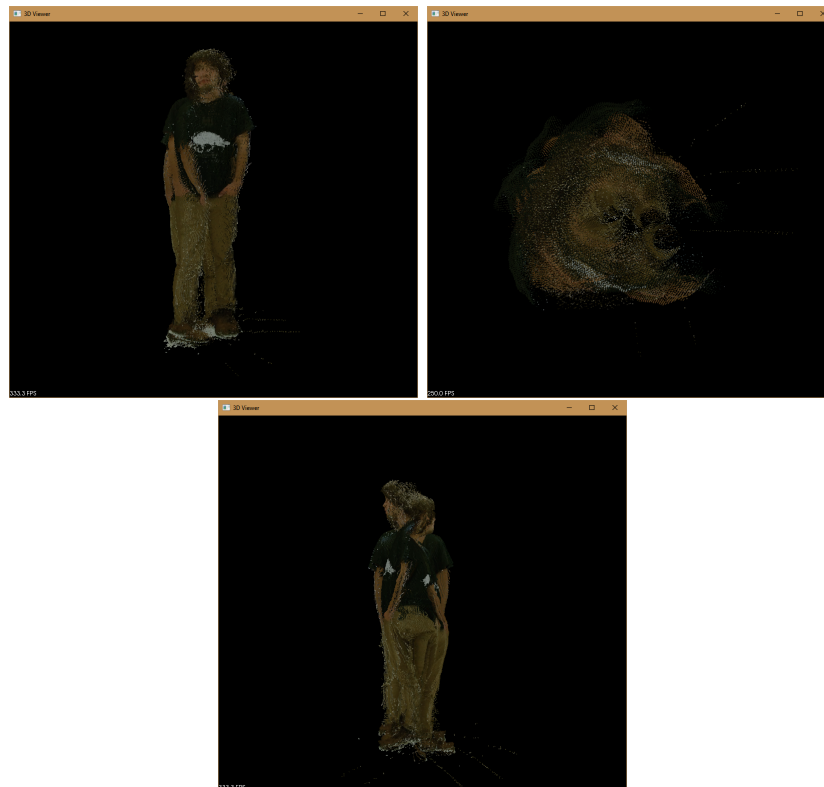
Nov 14, 2016

# 1 Tasks completed

Each working group has created its own class with the main functions developed since now. The classes are as follow:

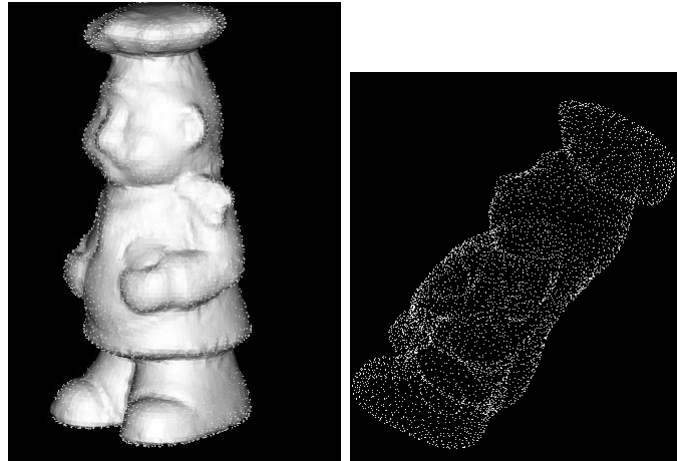
- **Scan Registration Class** (*Albert, Ezequiel*)

- *Uniformly downsampling function* (using *VoxelGridFilter*) takes as input the original Point Cloud and downsamples it to about 10% of the points.
- *Rough Alignment Function* using sample alignment consensus (*SAC*)
- *ICP Alignment Function*

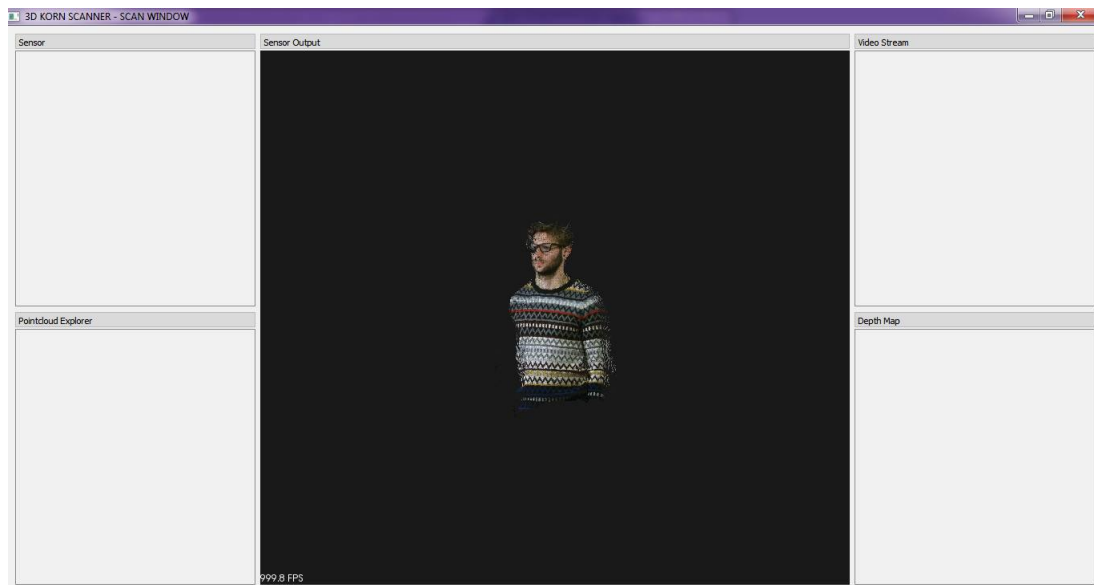


- **Point Cloud Operations Class** (*Savinien, Luca, Roberto, MengDi*)

- *Conversion Function* of Point Cloud object from type  $\langle XYZRGB \rangle$  to type  $\langle XYZ \rangle$
- *Passthrough Filter function*
- *Normal Estimation function*
- *Poisson Meshes function* takes in input the original Point Cloud and gives in output a mesh using all the function that we presented above.



- **GUI Class** (*Nayeem, Benjamin, Umamaheswaran*)
  - Load pointcloud in the GUI using QVTK Widget.
  - Login, Menu and Status Bar.



- **Kinect Contreller Class** (*Pamir, Dani*)
 

This group has already implemented the following functions and they are currently working on the class' implementation

  - *Start/Stop Grabber function*
  - *RGB Video Stream/Image Get function*
  - *Point Cloud Get function*



## 2 Main Goal For Coming Week

- Start integration of all the code together for first testing
- Create the presentation that will be held for the first demo
- Each group will start to implement new features inside its own class:
  - **Scan Registration Class**
    1. Improve the registration process with different approach.
  - **Point Cloud Operations Class**
    1. Create color meshes.
  - **GUI class**
    1. Work on Live Video Streaming.
    2. Divide the main GUI class into subclasses.
  - **Kinect Controller Class**
    1. Finish the implementation of the class.
    2. Current video stream from point cloud  $< XYZRGB >$ .
    3. Get pure  $RGB$  stream.

## 3 Important links

- Task allocation and progress (<https://goo.gl/WDHEjf>)
- Github repository (<https://github.com/umaatgithub/3D-KORN>)
- Group's work (<https://github.com/umaatgithub/3D-KORN/tree/master/Source-Code>)