Software Engineering Project Weekly Report

3D-KORN

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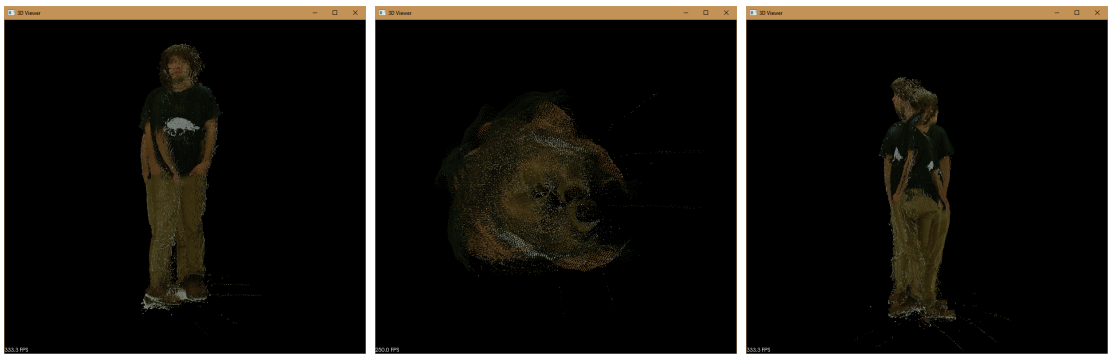
Nov 14, 2016

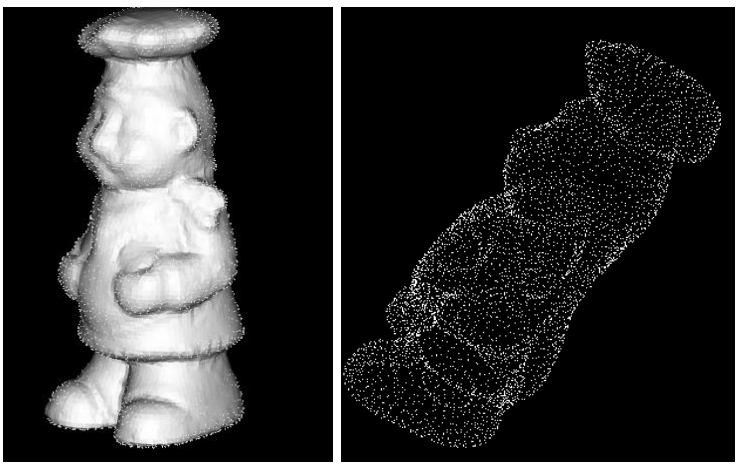
1 Tasks completed

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

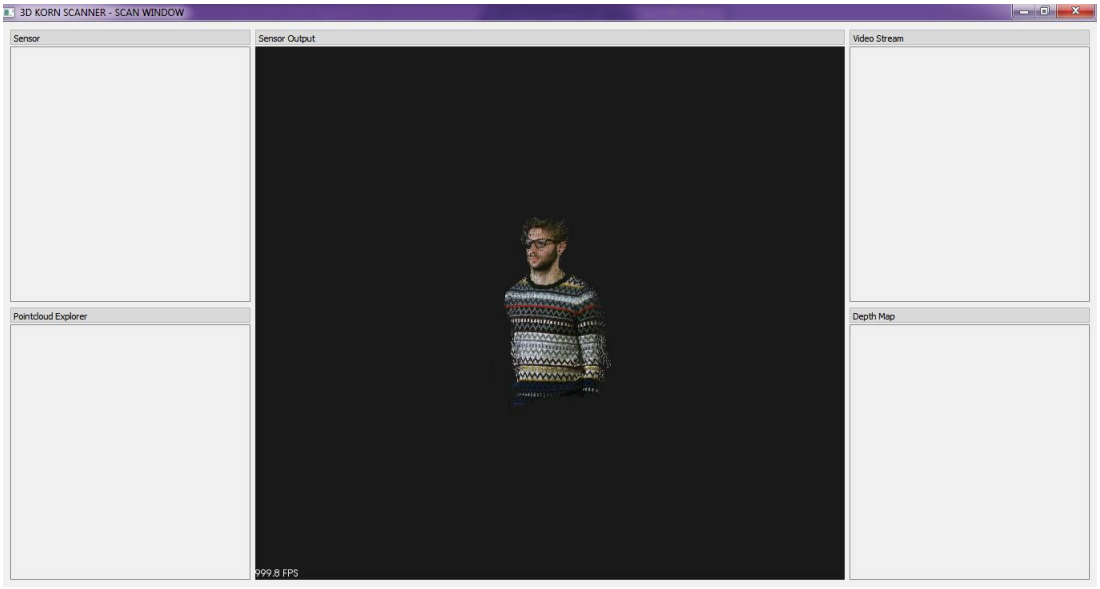
- **Scan Registration Class** $(Albert, Ezequiel)$
  - *Uniform Downsampling Function* (using $VoxelGridFilter$) takes as input the original Point Cloud and downsamples it to about 10% of the points.
  - *Rough Alignment Function* using sample alignment consesus (SAC)
  - *ICP Alignment Function*



- **Point Cloud Operations Class** $(Savinien, Luca, Roberto, MengDi)$
  - *Conversion Function* of Point Cloud object from type $< XYZRGB >$ to type $< XYZ >$
  - *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 functions that we presented above.



- **GUI Class** $(Nayeem, Benjamin, Umamaheswaran)$
  - Separate windows for Point Cloud scan and edit.
  - Start work on menubar, toolbar and statusbar.



- **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 (integration branch) (`https://github.com/umaatgithub/3D-KORN/tree/integration-branch/Source-Code`)